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CONTENTS.

ORIGINAL ARTICLES.

	No.
Africa: Art. On a Carved Ivory Object from Benin in the British Museum. (<i>With Plate I-J and Illustration.</i>) Sir C. HERCULES READ	72
Africa, Central. Outrigger Canoes in the Congo. E. TORDAY	41
Africa, East. A Linguistic Fragment from Western Kordofan. BRENDA Z. SELIGMAN	31
Africa, East. Notes on the East African Outrigger Canoe. CYRIL CROSSLAND	90
Africa, East. The Outrigger Canoe of East Africa. (<i>With Plate D and Illustrations.</i>) A. C. HADDON	29
America, Central: Chronology. The Maya and Christian Eras. RICHARD C. E. LONG	70, 74
America, North: Pottery. An American Dragon. (<i>With Plate L.</i>) G. ELLIOT SMITH	89
Arabia Petraea. Some Bedouin Customs. F. JOHNSON, M.B.	3
Archæology. See EGYPT; QUEENSLAND; WILTS.	
Archæology. An Early Mousterian "Floor" discovered at Ipswich. (<i>Illustrated.</i>) J. REID MOIR	60
Archæology. Two Bronzes of Assyrian Type. (<i>With Plate A.</i>) Sir C. HERCULES READ	1
Art. See AFRICA; PERU.	
Art. The Registration of Works of Art in Occupied Countries. Sir C. HERCULES READ	42
Borneo: Folklore. The Raja and the Pauper; A Borneo Folk-Tale. Translated by IVOR H. N. EVANS	4
Borneo: Technology. A Brass Drum from Borneo. IVOR H. N. EVANS	11
British New Guinea: Fishing and Magic. Fishing in the Trobriand Islands. BRONISLAW MALINOWSKI	53
Canoes. See AFRICA, CENTRAL; AFRICA, EAST; MELANESIA.	
Chronology. See AMERICA, CENTRAL; PERU.	
Cornwall: Mineralogy. Bronze and Tin in Cornwall. The late CLEMENT REID, F.R.S.	5
Crossing the Line. The Famous Baptism of the Tropic. H. A. ROSE	102
Egypt: Archæology. Some Flint Implements of Rostro-Carinate Form from Egypt. (<i>Illustrated.</i>) J. REID MOIR	2
Ethnology. Some Specimens from the Chatham Islands. (<i>With Plate K.</i>) H. BALFOUR	80
Ethnography. Maori Burial-Chests (<i>With Plate F and Illustrations.</i>) T. F. CHERSEMAN	49
Ethnography. Maori Burial-Chests. (<i>With Plate G.</i>) W. H. R. RIVERS	58
Ethnography. Maori Burial-Chests. H. D. SKINNER	59
Ethnography. See PAPUA.	
Europe: Witchcraft. Child-Sacrifice among European Witches. M. A. MURRAY	34
Europe: Witchcraft. Divination by Witches' Familiars. M. A. MURRAY	50
Europe: Witchcraft. The Devil's Mark. M. A. MURRAY	81
Europe: Witchcraft. Witches' Transformation into Animals. M. A. MURRAY	103
Finland: Magic Ritual. The Magic Birth "Motif" in the Kalevala. WILFRID BONSER	12
Fishing. See BRITISH NEW GUINEA; SOLOMON ISLANDS.	
Folklore. See BORNEO; IBO; JAPAN.	
Great Britain: Witchcraft. Witches' Familiars in England. M. A. MURRAY	61
Guatemala: Linguistics. The Letter "A" in Pokomchi. A. C. BRETON	92
Ibo: Folk-tales. Stories (Abstract) from the Awka Neighbourhood. N. W. THOMAS	14, 25, 32, 43, 51
India. Religion and Magic among the Nāyars. K. M. PANIKKAR	62
Japan: Folklore. Notes on Some Japanese Methods of Personal Purification after a Funeral. W. L. HILDBURGH	54
Japan: Folklore. Some Japanese Charms connected with Earthquakes. W. L. HILDBURGH	33

ed from M. M. Lal Lalhi on 27/8/89 @ Rs 5200/- Per Set (Del vols 22-27) page 1-5

	No
Geology. Greenhithe Shell-bed. REGINALD A. SMITH	101
Landmarks. See MALTA.	
Linguistics. See AFRICA, EAST; GUATEMALA; PAPUA.	
Magie. See BRITISH NEW GUINEA; FINLAND; INDIA.	
Malta: Landmarks. The Maltese Cart Ruts. W. BOYD DAWKINS	52
Malta: Landmarks. The Maltese Cart Ruts. (Illustrated.) CAPT. E. G. FENTON	40, 69
Malta: Landmarks. The Maltese Cart Ruts. (Illustrated.) COMMANDER H. N. M. HARDY	93
Melanesia: Canoes. An Anomalous Form of Outrigger Attachment in Torres Straits; and its distribution. (With Plate H and Illustrations.) A. C. HADDON	68
Mineralogy. See CORNWALL.	
Nigeria: Ritual. (I.) Agricultural Rites. N. W. THOMAS	75
Nigerian Notes. (II.) Metal Work. N. W. THOMAS	100
Obituary. Dr. Joseph Deniker. (With Plate E.) A. KEITH and A. C. HADDON	39
Obituary. H. W. Fischer. A. C. HADDON	82
Papua: Ethnography. The People and Language between the Fly and Strickland Rivers, Papua. HON. J. W. P. MURRAY and S. H. RAY	24
Papua, Gulf of: Ethnography. The Agiba Cult of the Kerewa Culture. (With Plate M and Illustrations.) A. C. HADDON	99
Peru: Art. Pre-Columbian Peruvian Chronology and Cultures. PHILIP A. MEANS	91
Peru. Peruvian Tapestries at Toronto. (With Plate C and Illustrations.) A. C. BRETON	22
Polynesia: Technology. Matau Hokori. (Illustrated.) H. G. BEASLEY	13
Queensland: Archæology. Note on some Large Stone Implements from Queensland. (With Plate B and Illustrations.) H. LING ROTH	10
Religion. See INDIA.	
Solomon Islands. Fish-hooks from the Solomon Islands. (Illustrated.) C. M. WOODFORD	73
Technology. See BORNEO; POLYNESIA.	
Wilts: Archæology. A Fragment of Blue Stone near Avebury, and its Accompaniments. (Illustrated.) Rev. H. G. O. KENDALL	30
Witchcraft. See EUROPE; GREAT BRITAIN.	
Zululand: Skin-Dressing. A Description of the Process of converting Raw Hides of Game or Domestic Cattle into Articles of Native Wearing Apparel. (Illustrated.) F. VAUGHAN-KIRBY	23

REVIEWS.

Africa. Bates. <i>Varia Africana, I.—Harvard African Studies</i> . Vol. I. O. G. SELIGMAN	44
Africa: Agriculture. <i>Husbandry in the Congo</i> . E. TORDAY	83
Africa, East: Linguistics. Beech. <i>Aids to the Study of Ki-Swahili</i> . S. H. RAY	76
Africa: Linguistics. Benton. <i>Primer of Kanuri Grammar</i> . S. H. RAY	47
Africa, South: Linguistics. McLaren. <i>A Concise Kaffir-English Dictionary</i> . S. H. RAY	84
Africa, West: Linguistics. Rattray. <i>An Elementary Mole Grammar, with a Vocabulary of over 1,000 Words</i> . S. H. RAY	95
Africa, West: Linguistics. Sumner. <i>A Handbook of the Mende Language</i> . S. H. RAY	36
America: Ethnology. Hodge. <i>Proceedings of the Nineteenth International Congress of Americanists</i> . A. C. BRETON	18
America, South: Prehistoric Bronze. Mead. <i>Anthropological Papers of the American Museum of Natural History</i> . Vol. XII., Part II. A. C. BRETON	15
American Indians. Miner. <i>The American Indians North of Mexico</i> . H. S. H.	7
Anthropology. Elliot Smith. <i>Primitive Man</i> . H. S. H.	19
Anthropology. Spurrell. <i>Modern Man and His Forerunners</i> . H. S. H.	17
Archæology. See INDIA.	
Art. See PERU.	
Asia Minor: History. Jastrow. <i>The War and the Bagdad Railway</i> . M. LONGWORTH	77
DAMES	

	No.
Australia: Church Missions. White. <i>Round About the Torres Straits: A Record of Australian Church Missions.</i> A. C. HADDON	65
Australia: Religion. James. <i>Primitive Ritual and Belief: an Anthropological Essay.</i> E. S. HARTLAND	63
Dravidian Problems. Elmore. <i>Dravidian Gods in Modern Hinduism. A Study of the Local Village Duties of Southern India.</i> G. ELLIOT SMITH	8
Dravidian Problems. Richards. <i>Side Lights on the "Dravidian Problem."</i> G. ELLIOT SMITH	8
Europe: Geography. Fleure. <i>Human Geography in Western Europe.</i> F. C. S.	104
Europe: Witchcraft. <i>Journal of Manchester Egyptian and Oriental Society, 1916-1917.</i> E. S. HARTLAND	46
Folklore. Stanley. <i>Animal Folk Tales.</i> M. L. DAMES	85
History. Rawlinson. <i>Intercourses between India and the Western World, from the Earliest Times to the Fall of Rome.</i> M. LONGWORTH DAMES	71
History. See ASIA MINOR; INDIA.	
India: Archæology. Brown. <i>Catalogue of Prehistoric Antiquities in the Indian Museum.</i> C. G. S.	55
India: Archæology. Yazdani. <i>Megaliths of the Deccan—A New Feature of them.</i> A. L. LEWIS	37
India: Folklore. Mackenzie. <i>Indian Fairy Stories.</i> M. LONGWORTH DAMES	96
India: History. Aiyangar. <i>A Little-known Chapter of Vijayanagar History.</i> M. LONGWORTH DAMES	64
Indian Antiquities. Cousens. <i>Bijāpūr and its Architectural Remains, with an Historical Outline of the Adil Shāhi Dynasty.</i> W. CROOKE	35
Indian Antiquities. Longhurst. <i>Hampi Ruins Described and Illustrated.</i> W. CROOKE	35
Indonesia: Ethnography. Perry. <i>The Megalithic Culture of Indonesia.</i> W. H. R. RIVERS	94
Jewellery. Kunz. <i>Rings.</i> W. L. H.	16
Linguistics. See AFRICA; AFRICA, EAST; AFRICA SOUTH; AFRICA, WEST.	
Magic. Frazer. <i>Jacob and the Mandrakes.</i> E. S. HARTLAND	27
Oriental Studies. <i>Bulletin of the School of Oriental Studies, London Institution.</i> S. H. RAY	26
Peru: Art. Means. <i>A Survey of Peruvian Art.</i> H. BALFOUR	45
Psychical Research. Coover. <i>Experiments in Psychical Research.</i> CARVETH READ	56
Religion. Montgomery. <i>Religions of the Past and Present.</i> E. S. HARTLAND	78
Religion. See AUSTRALIA.	
Research. <i>Journal of the Manchester Egyptian and Oriental Society, 1915-16.</i> E. S. H.	6
University of Pennsylvania. <i>The Museum Journal. Vol. IX. No. I.</i> A. C. BRETON	97
Wales: Geology. Whitehouse. <i>Descriptive Handbook of the Relief Model of Wales.</i> A. L. I.	66
Witchcraft. See EUROPE.	

ANTHROPOLOGICAL NOTES.

Accessions to the Library	9, 20, 48, 67, 88, 107
Antiquities of British Honduras	21
Anthropology in the United States	28, 79, 87
Rudler Memorial in University College of Wales... ..	38
Magic	57
Archæology in Mexico	86
Archæological Specimen from Guatemala	98
Dr. Gann's Work in British Honduras... ..	105
Lectures to Soldiers	106

ILLUSTRATIONS IN THE TEXT.

N.B.—Photographs, unless otherwise stated.

Fig. 1. Back view of Bronze of Assyrian Type (<i>Drawing</i>)	...	With No. 1
Figs. 2 and 3. { Flint Implements of Rostro-Carinate Form from Egypt. (<i>Drawings</i>)	...	2
{ Sectional Drawings of Implements	...	2
{ Stone Implements from Queensland	...	10
Figs. 5, 6, 7. { Brass Drum from Borneo	...	11
{ Polynesian Wooden Hook (<i>Matau Hokori</i>)	...	13
Fig. 3. Diagram of colour arrangement of Ica Tapestry with Condor Figures. (<i>Drawing</i>)	...	22
Fig. 4. Details of Ica Tapestry with Condor Figures of fifth, sixth and seventh rows	...	22
Natives using the I-Zembe. (<i>Drawing</i>)	...	23
Fig. 1. Method of Tying Skin to Peg with Tie-ropes. (Mugcosi.) (<i>Drawing</i>)	...	23
Fig. 2. I-Zembe 8½ in. long. (<i>Drawing</i>)	...	23
Fig. 3. A Type of I-Zembe, of which a specimen was unobtainable. (<i>Drawing</i>)	...	23
Fig. 4. Rounded Metal Pin used for sharpening the Mazembe, 8 in. long. (<i>Drawing</i>)	...	23
Fig. 5. I-Zidhlwadhla No. 1, 8 in. long. (<i>Drawing</i>)	...	23
Fig. 6. I-Zidhlwadhla No. 2. (<i>Drawing</i>)	...	23
Fig. 7. Makololo Skin-dressing Tool in the British Museum	...	23
Fig. 1. Perspective View of a Boat, with a double outrigger, from the Suaheli Coast, etc. (<i>Drawings</i>)	...	29
Fig. 2. Sketch of the Galawa, of Lamu. (<i>Drawing</i>)	...	29
A Fragment of Blue Stone near Avebury. (<i>Drawings</i>)	...	30
Fig. 1. Cart-ruts to the North of Dweira, on the way from Naxxar to St. Paul's Bay	...	40
Fig. 2. Deep Pre-historic Cart-ruts on the Selmeim Plateau	...	40
Figs. 6 and 7. Maori Burial Chests	...	49
Fig. 1. Cross-section of River Gipping showing approximate position of excavation. (<i>Drawing</i>)	...	60
Fig. 2. Diagrammatic Drawing of Section	...	60
Fig. 3. Early Mousterian Coup-de-poing or Hand Axe. (<i>Drawing</i>)	...	60
Fig. 4. Mousterian Point made from a thickish flake of Flint. (<i>Drawing</i>)	...	60
Fig. 10. Moluccan Attachments: A. Batjan, B. Ambon, C. Banda	...	68
Fig. 11. Double U Moluccan Attachments: A. Nakanai, B. Kaloga, C. San Cristoval, D. Tonga	...	68
Section of Old Wheel Track	...	69
Plaited Carved Design from Benin	...	72
Fig. 1. Fish-hook of Turtle Shell from the Solomon Islands	...	73
Fig. 2. " " Black Pearl Shell from the Solomon Islands	...	73
Fig. 3. " " Iridescent Pearl Shell from the Solomon Islands	...	73
Fig. 4. Lure of White Pearl Shell from the Solomon Islands	...	73
Fig. 5. Fish-hook of Turtle Shell from Solomon Islands	...	73
Figs. 6 and 7. Lures of Lustrous Pearl Shell from Solomon Islands	...	73
Fig. 8. Ordinary Wire Nail adapted for use as a Fish-hook	...	73
Figs. 9A, 9B. Lure from the Gilbert Group	...	73
Plt hewn in rock, Malta. (<i>Drawing</i>)	...	93
Neolithic Stone Utensil, Malta. (<i>Drawing</i>)	...	93
Fig. 1. <i>Dubu daima</i> , Pai-ia-a, Omati River	...	99
Fig. 2. <i>Agiba</i> in the <i>dubu daima</i> at Dopima	...	99
Fig. 3. <i>Agiba</i> in Aird River delta from Seligman	...	99
Fig. 4. Bird-skull Shrines, <i>gope</i> , Wododo, Dibiri Island	...	99
Fig. 5. <i>Kaiimuru</i> from a <i>dubu daima</i> at Pai-ia-a, Omati River	...	99
Fig. 6. (a) Effigy of a Deceased Father, roughly, carved out of heavy wood, carved portion painted black, red and white, with a shell eye	...	99
(b) Effigy of a Deceased Mother, uncoloured, with characteristic woman's dress	...	99
(c) Magical Stick (<i>abioabio</i>) carved out of heavy wood, carved portion originally coloured red and white	...	99

DESCRIPTION OF THE PLATES.

	With No. 1
A. Two Bronzes of Assyrian Type ...	10
B. Stone Implements from Queensland ...	22
C. Peruvian Tapestries at Toronto ...	29
D. The Outrigger Canoe of East Africa ...	39
E. Dr. Joseph Deniker ...	49
F. Maori Burial Chests ...	58
G. Maori Burial Chests ...	68
H. Anomalous Form of the Outrigger in Torres Straits ...	72
I—J. A Carved Ivory Object from Benin ...	80
K. Some Ethnological Specimens from the Chatham Islands ...	89
L. An American Dragon... ..	99
M. Agiba Shrine from a Dubu Daima, at Dopima, Goaribari Island ...	

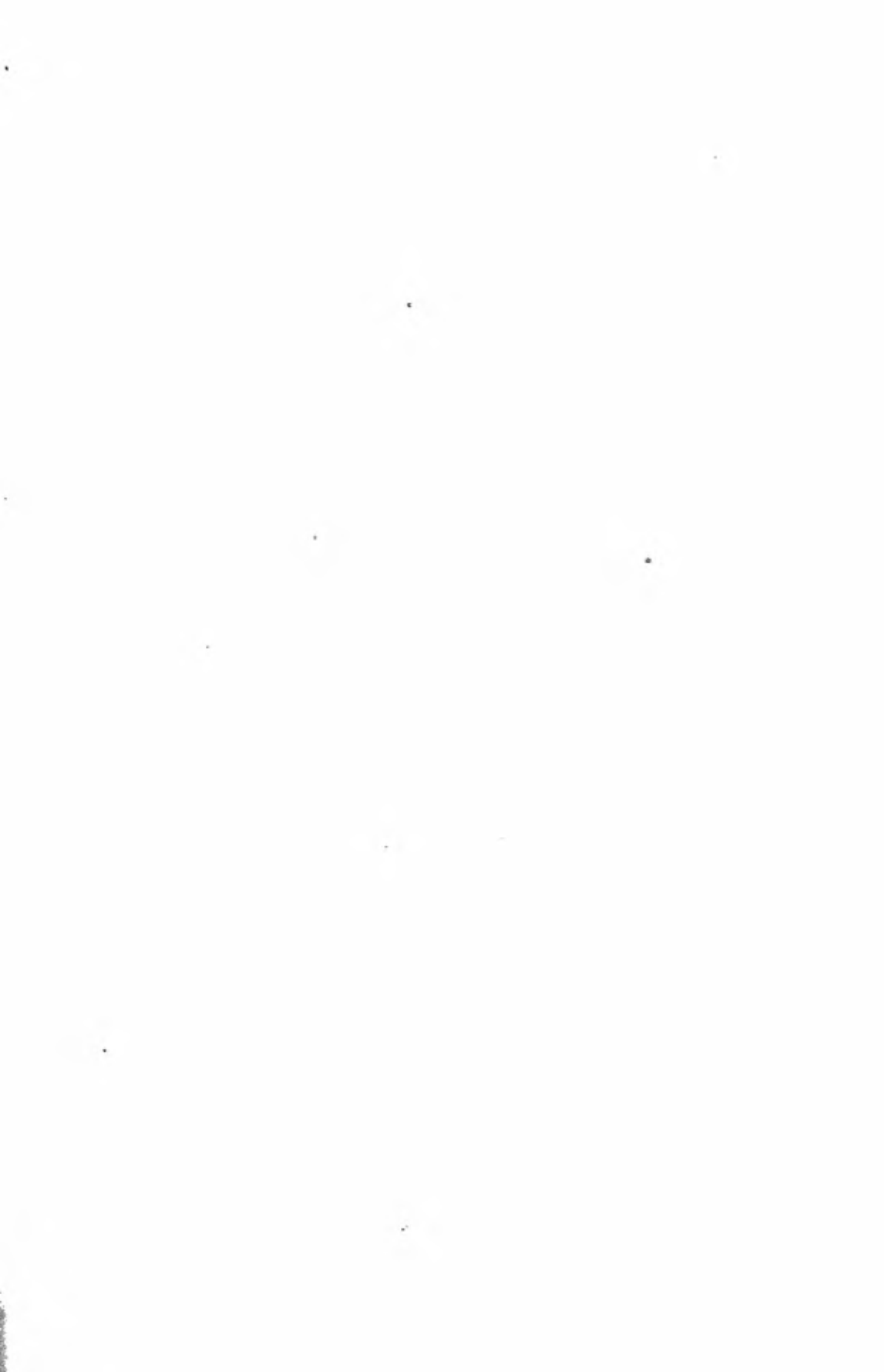
ERRATA.

- No. 14, page 23, line 6, *for Anka read Awka.*
 No. 23, page 39, line 46, *for Bankside read Bankfield.*
 No. 33, page 57, line 4, *for Kyōlo read Kyōtō.*
 No. 33, page 58, footnote †, *for nationalize read rationalize.*
 No. 33, page 59, footnote ‡, *for belief read beliefs.*
 No. 40, page 71, line 25, *for Dr. Hane read Dr. Hume.*
 No. 40, page 71, line 43, *for Semitis read Semites.*
 No. 54, page 92, footnote *, *for piona read pious.*
 No. 54, page 93, line 31, *for throughout read through.*
 No. 70, page 124, line 9, *for 3 Zac read 18 Zac.*
 No. 79, page 136, lines 35, 36, 37, *for "If then they dropped the 113 days rectified" read "The error at 9-12-11-4-2-9-9 I K (17 Mol) would be practically the same. If, then, they dropped the 113 days and commenced a new Mars series starting from 13 Muluc instead of 9 Ik their Mars calendar reckoning from 4 Ahau 8 Cumhu would be rectified."*

LIST OF AUTHORS.

N.B.—The Numbers to which an asterisk is added are those of Reviews of Books.

- BALFOUR, HENRY, 45*, 80.
 BEASLEY, H. G., 13.
 BONSER, W., 12.
 BOYD DAWKINS, W., 52.
 BRETON, A. C., 15*, 18*, 22, 92, 97*.
- CHEESEMAN, T. F., 49.
 CROOKE, W., 35*.
 CROSSLAND, CYRIL, 90.
- DAMES, M. LONGWORTH, 64*, 71*, 77*, 85*, 96*.
 DURHAM, M. EDITH, 57.
- EVANS, I. H. N., 4, 11.
- FENTON, CAPT. E. G., 40, 69.
- HADDON, A. C., 29, 39, 65*, 68, 82, 99.
 HARDY, COMMANDER H. N. M., 93.
 HARTLAND, E. S., 6*, 27*, 46*, 63*, 78*.
 HILDBURGH, W. L., 16*, 33, 54.
 H. S. H., 7*, 17*, 19*.
- JOHNSON, F., 3.
- KEITH, A., 39.
 KENDALL, REV. H. G. O., 30.
- LEWIS, A. L., 37*, 66*.
 LONG, RICHARD C. E., 70, 74.
- MEANS, PHILIP A., 91.
 MALINOWSKI BRONISLAW, 53.
 MOIR, J. REID, 2, 60.
 MURRAY, HON. J. W. P., 24.
 MURRAY, M. A., 34, 50, 61, 81, 103.
- PANNIKAR, K. M., 62.
- RAY, S. H., 24, 26*, 36*, 47*, 76*, 84*, 95*.
 READ, SIR C. HERCULES, 1, 42, 72.
 READ, CARVETH, 56*.
 REID, CLEMENT, 5.
 RIVERS, W. H. R., 58, 94*.
 ROSE, H. A., 102.
 ROTH, H. LING, 10.
- S., F. C. 104*.
 SELIGMAN, BRENDA Z., 31.
 SELIGMAN, C. G., 44*, 55*.
 SKINNER, H. D., 59.
 SMITH, G. ELLIOT, 8*, 89.
 SMITH, REGINALD A., 101.
- THOMAS, N. W., 14, 25, 32, 43, 51, 75, 100.
 TORDAY, E., 41, 83*.
- VAUGHAN-KIRBY, F., 23.
- WOODFORD, C. M., 73.
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TWO BRONZES OF ASSYRIAN TYPE.
(FULL SIZE.)

MAN

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ORIGINAL ARTICLES.

Archæology.

With Plate A.

Read.

Two Bronzes of Assyrian Type. *By Sir C. Hercules Read.*

Some months ago I described in MAN (1917, 1), two bronzes of animals of a type that occurs but rarely in this country. By an odd chance two others have come into my hands having certain features in common with the first, but in other ways even more enigmatical. They are shown in the accompanying plate; their recent history is brief, but in one respect interesting. They were ceded to me by Lady Hunter, who told me that her husband had obtained them from a Parsi, in Bombay, I think; further, that the story in the family was that they had possessed the bronzes from time immemorial, they having been brought by their ancestor from Persia, where they had been attached to the gate of the city whence the Parsi family had come.

They interested me both by their intrinsic merit and also from their artistic and technical affinity with the Scythian bronzes to which I have referred.

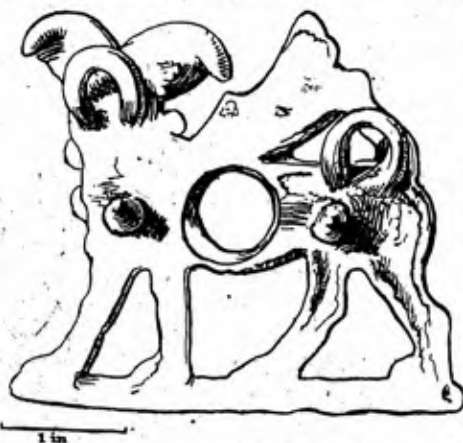
To deal first with their technical peculiarities. It will be seen that they are cast *à jour*, with nothing to represent background, the only feature extraneous to the animal being the bar under the feet that forms a base to the whole. The reverse side is either flat or slightly hollowed to economise the metal. In these respects they resemble the Scythian animals, but the Persian beasts are in addition provided, on the reverse, each with two loops and two conical projections, all cast at the same time as the rest. This can be best seen in the figure on page 2; the loops are all inclined upwards, the projections standing at practically a right angle to the plane of the casting.

The work has been executed by very competent hands, and it is not impossible that the process by which the casts were produced is that known as *cire perdue*, in which a wax model is first made, then coated with clay, and the wax being melted

out, the resulting cavity is then filled with the molten metal. By this method all the remarkable castings from Benin were produced. The surface is at present coated with a black patina, such as would result from long use or exposure above ground, and differing widely from the oxidation that results from long burial. So far, therefore, the condition of the bronzes is in accord with the Parsi story.

The animals represented at once recall the characteristic bull-like monsters of Assyria, but at the same time there are differences that may be of some significance. The Assyrian bulls are human-headed, and these also have human heads, but although the modelling of the bodies suggests a bull, the horns are unquestionably those of a sheep, and, moreover, appeared to me likely to be characteristic of a particular species. I therefore sent a photograph of the two bronzes to Lord Rothschild, asking for information on this point. His kind reply is interesting; he says: "The horns of the figure are those of the wild sheep of Asia Minor and Armenia, *ovis orientalis gmelini*, and so your surmise as to the Armenian origin is confirmed. Of course, typical *ovis orientalis* has also very similar horns, but this is confined to Cyprus."

Thus we have the search for a country of origin brought down to comparatively narrow limits. In writing to Lord Rothschild, I had told him that on examination of the bronzes from the point of view of type, I had come to the conclusion that they



were more nearly related to the antiquities of Armenia than of any other country—an opinion in which my colleague, Dr. Budge, agrees. It is for this reason that I describe the opinion of Lord Rothschild as interesting, for it agrees, from an entirely different class of evidence, with the conclusion on archaeological grounds.

Thus we are dealing with relics of an ancient civilisation of Armenia, and with a type derived from Assyria, and, assuming these two facts, there is nothing inherently improbable in the Parsi story of the bronzes coming from Persia; it is,

on the contrary, more likely than not. The relations between ancient Assyria and Persia, on the one hand, and Armenia are known historically to have been pretty constant. Though this testimony as to their country is fairly conclusive, I fear I cannot provide anything precise as to date. I should hesitate to place them so far back as the golden age of Assyria, and in the other direction I feel sure that they are by no means of modern times—or even so recent as mediæval. Analogy of technique and type, in which I would recall the Siberian bronzes above mentioned, would incline me to place the date somewhere B.C., perhaps a century or two.

Although the broad features of the design have an Assyrian look, it is remarkable how much the two differ on close comparison. The wings on our animals, for instance, proceed from the shoulder, whereas those of the Assyrian winged monsters nearly always cover the chest, or appear to do so in the side view. On the embroidery of a king's robes from Nineveh, however, certain sphinxes and winged bulls have wings much like those of our animals, and a painted brick from Nimrud shows a ram with horns not unlike.*

A further small point is that in Assyria the tails of monsters in this attitude always seem to hang down, and are not curled over the back, as here—and the

* Layard, *Monuments of Nineveh*, Ser. I, Pl. 8, 44, 87.

small single curls of hair on the neck are not found in this form. The modelling of the human faces, again, differ widely from anything found in Assyrian work of good period; they are of a very rudimentary school of modelling, the eyes being mere dabs in relief.

So far for country, period, and artistic analogies. The next point is one where I confess I am frankly at a loss—and that is, for what purpose were these enigmatical objects made? The main factors are that we have the two loops for attachment or suspension, aided by pegs which would appear to serve the purpose of keeping the bronzes vertical if suspended by the rings on a wall or door. Then through the chest of each animal is a circular hole with flanged circumference. A careful examination of these holes makes it clear that something, rope or thong, habitually passed through them, and that the thong passed in a different direction in the two bronzes. In the case of the animal on the right in the plate, the wearing of the orifice shows that it passed diagonally across the animal, and the outline figure (*cf.* the back of the same bronze) again shows the corresponding bevelling; in the other bronze the wear of the inner side of the flange is equal around the circumference.

What these points indicate is hard to say. The nature and position of the two loops seem to be adapted only for suspension, and not for attachment by rivets, and if this be so the projecting pegs have a real function, but such an explanation enhances the difficulty of finding a function for the circular openings. I must leave this problem to someone more ingenious or experienced.

I should add that the ultimate destination of these bronzes is the British Museum.

C. HERCULES READ.

Egypt: Archæology.

Moir.

Some Flint Implements of Rostro-Carinate Form from Egypt.

By 2

J. Reid Moir.

The three flint implements to which this note refers form part of the Seton-Karr collection in the Ipswich Museum, and it is owing to the courtesy of the curator of that institution that I have been enabled to figure and describe them. It is now well known that the rostro-carinate flint implements were first found in the detritus-bed below the Pliocene red crag of Suffolk, and in the Middle glacial gravel and other pre-Palæolithic deposits of that county. An account has also been published of the occurrence of implements of this type in beds of gravel situated in other parts of England (*Journ. Roy. Anthr. Inst.*, Vol. XLVI, 1916, January to June, pp. 197-220). But at present we have no record of rostro-carinates being found outside this country, and I consider, therefore, that the existence of these three Egyptian specimens should be placed on record.

It will be seen from an examination of Figs. 1, 2, and 3 that the anterior region (*ant.* in drawings) of each specimen has been flaked into a most definite beak-like form. The ventral plane in each case is very clearly marked, and the carina exhibits the usual curvature, as seen in the numerous rostro-carinate implements hitherto discovered. The sectional-drawing of the anterior region of the specimens shows also the markedly triangular form which all true rostro-carinates exhibit.

It is noticeable, too, that the flaking which has given to the implements this beak-like profile has been caused by blows removing large flakes of flint, and that, in consequence, the flake-areas have been greatly truncated in the process of making the implement. Thus, except for the fact that these specimens are made from the peculiar putty-coloured and somewhat cherty Egyptian flint, their form, so far as the anterior region is concerned, is very similar to the rostro-carinate implements of pre-Palæolithic age found in Suffolk and elsewhere in England.

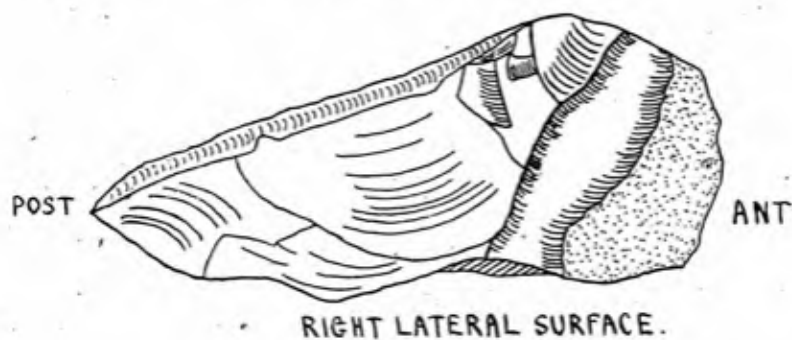
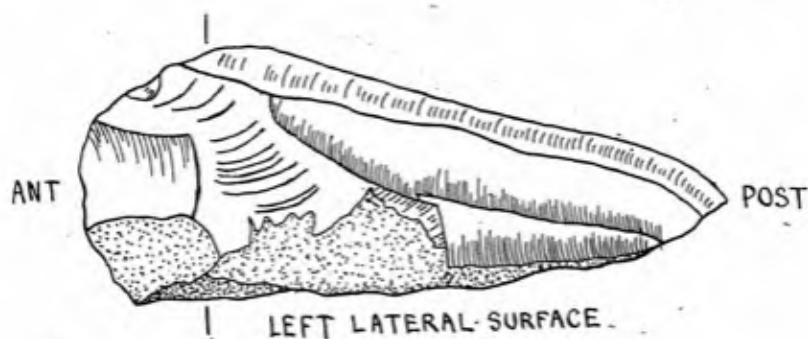


FIG. 1.

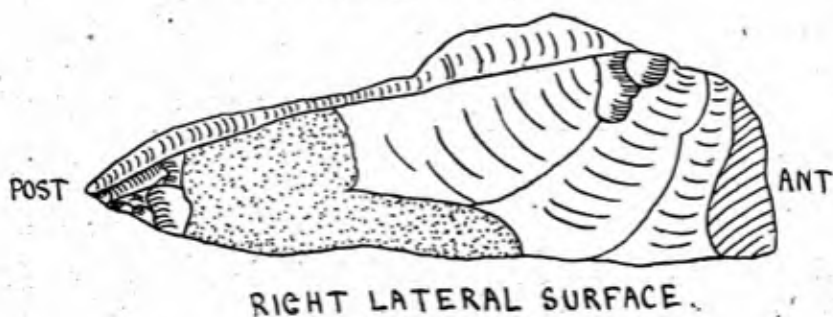
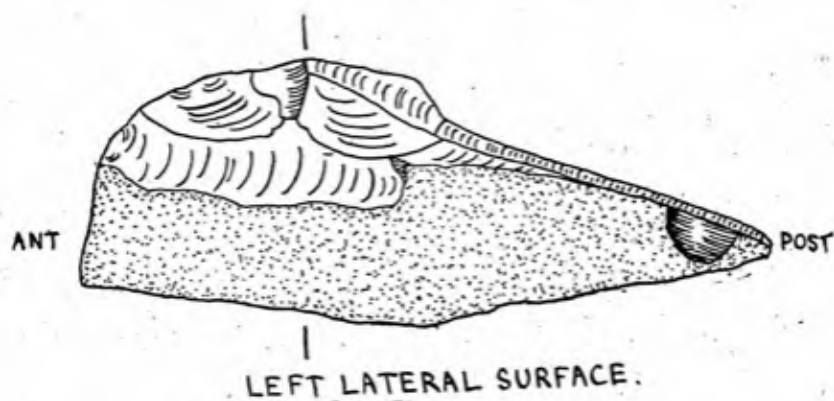


FIG. 2.

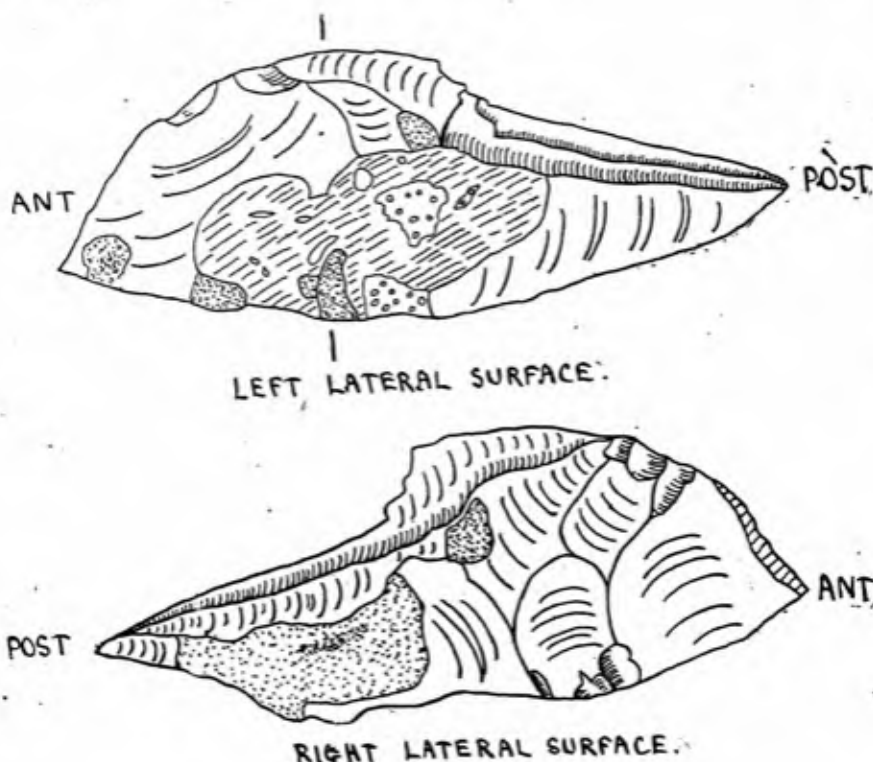
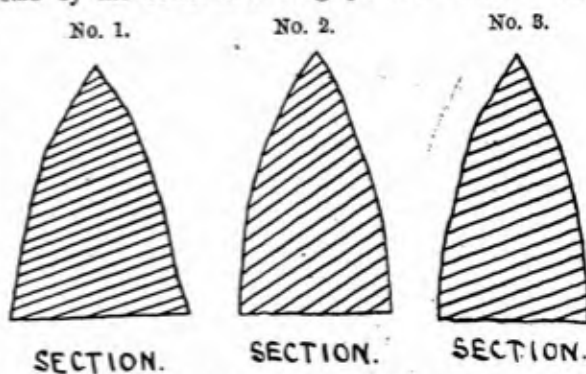


FIG. 3.

But when an examination of the posterior region (post. in drawings) of the specimens is made, a totally new characteristic is observable. In nearly all the rostro-carinate implements hitherto discovered the posterior region is wide and massive, but in these Egyptian specimens the reverse is the case. The posterior region has, in fact, been greatly reduced in size by the removal of long parallel flakes. The

blows which removed these flakes were delivered on the extreme posterior edge of the ventral plane, and the technique employed in their removal was of quite a different order to that adopted in the formation of the anterior portion of the implements. It would appear that, if needed, the posterior region of the specimens might have been used as a push-plane, the ventral area providing the necessary flat surface for such manipulation. But if this were the only use to which the implements had been put, there would have been no need for the production of the anterior region, with its sharp-edged carina, and moreover this carina would make prehension difficult and uncomfortable.

It seems, therefore, that the carina fulfilled some special purpose, and I have



SECTIONAL DRAWINGS OF IMPLEMENTS.

already given it as my opinion that in all probability it was utilised as a chopping or cutting edge (*Journ. Roy. Anthr. Inst.*, Vol. XLVI, 1916, January to June, pp. 197-220). These Egyptian implements may in consequence represent specimens adapted for two distinct purposes. But it is of great interest to notice the skill with which the anterior region has been fashioned by means of blows removing large flakes of the true pre-Palæolithic order, while the posterior region has been modified by the removal of long, narrow flakes, such as would be most readily associated with the workmanship of the closing phases of Upper Palæolithic times.

So far as my experience goes, it is not often that one sees flaking of such divergent kinds, and of the same age, on one and the same implement, and I regard such an association as being not without significance.

Unfortunately, I am not able to say to what prehistoric period these Egyptian flints belong. One specimen bears a label of which the legend reads: "Egypt, E. Desert," but that does not help us to a decision. The specimens, so far as I am able to judge, have not lain long, if at all, upon the present surface of the ground, as they are not in any way glazed, nor do they exhibit the well-known mahogany "patination" of so many surface flints from Egypt. From their quite unabraded appearance, and the almost complete absence of any signs of use, I should be inclined to think that they were dug up from some old "floor" or occupation-level, and where an actual flint working-site or "station" existed.

As there are no doubt a very large number of Egyptian flint implements in various collections in this country, it may be that similar forms to those here described may now be recognised, and I should be very glad if any information dealing with the provenance and age of such specimens could be furnished if it is found that other implements of this type from Egypt or elsewhere are in existence.

J. REID MOIR.

Arabia Petræa.

Johnson.

Some Bedouin Customs. By F. Johnson, M.B.

3

Division of Spoil.—Some ten years ago it was my good fortune to spend a day and a night with a pure Bedouin tribe inhabiting the desert that stretches eastward from the border of the ancient land of Edom. The tribe is known as the 'Atowni or the Beni 'Atiyeh. The wanderings of the tribe range between Tabūk in the Northern Hejaz and Kerak, a town in the mountains east of the Dead Sea.

On arriving at the encampment I found a loud altercation was proceeding relative to some camels that had been seized from an enemy tribe; a dividing of the spoil must needs be effected. The arrival of my Arab companions and myself caused no interruption of the proceedings beyond the momentary action of preparing us seats in the guest's half of the sheikh's tent and leading off our horses for tethering. The arrival of a *frangi* guest, uncommon as such an event was in the experience of this tribe, failed to have a distracting effect upon the proceedings. For the time being at least the guests were *Awādim* (the plural form of *Adami*), sons of Adam, distinct, it is true, from the lower animal creation, but not calling for distinction within the genus. After many years' contact with the tent-dwelling Arabs, I have noticed this mental trait in them, though relatively unnoticeable in the town and village-dwelling Arabs, as might be expected. The trait, in my opinion, does not proceed from a discourteous spirit; on the contrary, amongst tent-dwellers one has seen some fine proofs of good breeding. The classifications or distinctions formed by the mind of the nomad must, as the result of his surroundings and manner of life, be of a most elementary order. God, Man, and Nature, animate and inanimate, are of course chiefly distinguished. Sub-divisions tend to be viewed as more or less superfluous. This, however, is an excursion from the subject in hand.

The altercation must have lasted about an hour after our arrival, the disputants meanwhile sitting about irregularly outside the open tent, when suddenly a very impressive and significant act took place. The disputants rose from the ground and advanced towards the sheikh, who remained sitting. As they approached him they took off all the weapons they carried on their persons—swords, pistols, and knives—and laid them down at his feet. The disputants then resumed their seats. The sheikh, who, whilst the dispute lasted, did not appear to be giving special heed to the words of the disputants, and certainly did not interrupt their loud talking with questions, then proceeded to adjudicate. Without moving from his sitting posture and after a short pause, during which silence was established, he began with what seemed to be a sort of invocation in which he called God, the Prophet, and the Fathers of the tribe to bear witness. Then in a comparatively few words he appor-tioned the camels to their new owners; the actual number of camels in question was, I believe, quite small. His judgment was apparently accepted as final. The dispute rested, anyhow, for the twenty-four hours that followed, till we bade farewell to our hospitable friends. Judgment being given, the men girded on their arms again and dispersed to the tents forming the encampment.

It can hardly be doubted that I witnessed on this interesting occasion a ceremonial that had its origin in the remote past, certainly in the pre-Mohammedan era. The invocation of the Fathers of the tribe—as far as my memory serves, three or perhaps four names were mentioned—following the names of God and the Prophet, is noteworthy. The act of depositing the arms at the feet of the sheikh could only be expressive of the willingness of the disputants to accept his arbitration, and a sort of public witness that neither party thereafter would have recourse to violence whichever way his decision might go.

Pain in the Back.—In the course of a journey in the Arabah, that strange tract of country extending between the southern end of the Dead Sea and the Gulf of Akabah, I came to a strange formation of rock. It took the form of a low archway. My Arab companions and I were accompanied by a local Arab guide. On reaching the rock which abutted on our pathway the guide halted, and, after the Moslem fashion, he removed his shoes and cloak and recited a prayer. This finished, he stooped in order to pass under the archway and then rejoined us. I questioned him concerning the archway, and was informed that the recitation of a prayer followed by the passage through the archway would bring relief to those suffering from pain in the back.

The Sanctity of a Saint's Tomb.—The point here illustrated is the availing power of a saint's tomb as a means of protection to property. If I mistake not, the example about to be related is common enough in the Near East.

I have seen two or three ploughs of the usual simple Eastern pattern piled up on the tomb of a holy man—in this instance a rough stone, much out of repair, without a surrounding enclosure or domed *gubba*. They are deposited thus for safety and for the convenience of the owners, who may be engaged at work at some distance from their homes, and wish to avoid carrying the plough backwards and forwards. Such articles are perfectly safe when so placed. To interfere with them would be to incur the displeasure of the spirit of the departed saint, and would draw heavy visitation upon the "house," i.e., the family of the thief.

Sacrifice at Hot Springs.—On the east of the Dead Sea, about 800 feet above the level, are found at least three hot springs held in great repute for their medicinal qualities by the inhabitants of those parts. The best known is the spring in the neighbourhood of Machaerus, the place of imprisonment of St. John the Baptist, now a deserted ruin.

In resorting to the spring, the natives invariably take a sheep or goat for sacrifice. The benefits of the bath are believed to proceed through the medium of a sheikh or holy man whose spirit presides over the spring. To secure his favour the sacrifice is offered. I have been told that sometimes the victim is slaughtered in such a way that its blood mingles with the steam rising from the spring, and that the patient reckons on the maximum benefit if he can expose his body to the combined fumes of the fresh blood and the boiling water.

F. JOHNSON.

Borneo: Folklore.

Evans.

The Raja and the Pauper: A Borneo Folk-Tale. *Told by Si Ungin a Bajau, of the Tempasuk District, British North Borneo. Translated and taken down by Ivor H. N. Evans.* **4**

There was once a very handsome man who had married a beautiful wife.

The husband said one day to his wife: "If I were to die, would you marry again?" The wife did not answer him properly, but asked him in turn: "And if I were to die, would you marry again?" The man replied: "If you were to die first, I would not marry another." Then said his wife, "If that is your answer neither should I wish to marry again if you were to die first." The husband and the wife therefore agreed that, if either of them died, the remaining one should not remarry.

Some time afterwards the man became ill, and, when he had been sick for three or four days, he died. His mother and father came and wished to bury him, but his wife would not allow them to do so.

Then said his mother and father to the woman: "What do you want?" And the wife replied: "I wish to lie near him until nothing but his bones are left." So the woman slept near her husband's corpse, and she became defiled with its putrefaction. When nothing remained except the bones she went to bathe, and having done so, she again appeared beautiful. All the men in the country wished to marry her, but she would have none of them, saying, "I still have a husband."

At last the Raja of another country heard a report of her beauty. He loaded his vessel with costly gifts and prepared to set sail with his companions. Now a certain poor man, who as yet had not married, was in the Raja's train, and when the ship was laden this poor man said to the Raja: "Your Highness, your slave would like to go with you and see this woman." Then, said the Raja, "What is the use of your going there, you are only a pauper; you have no goods, and the only thing that you possess is your own body."

The poor man answered: "If your Highness will take pity on your slave, your slave would like to go and see this country." "Very well," replied the Raja, "you can come, but to-morrow I set sail."

So the poor man thanked the Raja and went home. That evening he said to his mother: "Mother, put me up some rice in a bundle." His mother asked him: "Where are you going?" and he replied, "I am going with the Raja to see this woman."

The same night he went to the graveyard and, digging open a grave, took the bones from it, and carried them home. The next morning, when the Raja was about to sail, he placed the bones in a large basket and went on board. The ship sailed away and after a time arrived at its destination.

When the Raja had disembarked, he gave it out that he wished to marry the woman. Next he sent men requesting an answer to his proposal, and the woman replied, "I do not wish to marry, for I have a husband already—these bones." Then said the Raja, "Tell the woman to throw away the bones and I myself will

"occupy their place and will give her as dowry all that my ship contains"; but the woman answered again that she already had a husband.

That evening the poor man left the ship and, taking his basket with him went to the woman's house. When he got there it was dark, and he said to the woman's father, "Will you let me sleep here to-night, for darkness has come on while I have been walking." The woman's father replied, "Very well, you can sleep here." So the woman's father gave him food and, when all the people of the house had fed, he unrolled a sleeping-mat and gave it to him.

Now when the poor man had spread out his mat, he opened his basket, took out the bones and placed them near him. The father of the woman said to him, "What are those?" The poor man replied, "They are the bones of my wife, and wherever I go, I take them with me." "Allah!" said the father, "why my daughter also keeps the bones of her husband; look for yourself."

Said the poor man: "I promised my wife, when she was alive, that, if she died first, I would not marry again, and she made a like promise to me. Now she is dead, I do not wish to marry again, and I carry my wife's bones with me." Then spoke the woman: "I made a promise just such as yours, and now I do not wish to marry a man, however handsome he may be, or however many goods he may have."

After this the people of the house went to sleep, but the poor man kept awake, and at midnight he took away the bones of the woman's husband, mixed them with those that he had brought with him, and put them near the cooking-place. Then he feigned sleep, and at about five o'clock in the morning sat up and pretended to weep. So because of his great lamentation the father of the woman, the woman herself, and all the other people of the house awoke. And the father said to him: "Why do you weep?" The poor man replied: "My wife is not here near me; where can she have gone?" Thereupon the woman began to bemoan herself because the bones of her husband were missing as well. So the people of the house searched for the two skeletons, and they found them near the cooking-place.

Then both the man and the woman lamented afresh, since the bones of the woman's husband were lying with the skeleton which the poor man said was that of his wife.

Thus there arose a lawsuit because the bones of the poor man's "wife" had been unfaithful with those of the woman's husband; and the judgment of the elders was that, as the bones had been unfaithful, the man and the woman were absolved from their promise, and, considering the facts of the case, they thought it fitting that the man and the woman should marry.

So they were married; and the Raja was very angry with the poor man, and went home to his own country; but the poor man stayed with his wife. As for the bones, the people of the house took them and buried them. I. H. EVANS.

Cornwall: Mineralogy.

Bronze and Tin in Cornwall. *By the late Clement Reid, F.R.S.**

Reid,

5

The mode of occurrence of the ores of tin and copper suggests that bronze may have been discovered independently in several countries, and without any necessary acquaintance with native copper.

The use of native copper would probably originate in districts where it occurs in large masses—not in Britain, where the pieces are rare and usually small. It would be treated as a tough stone, hammered cold, but not cast. The known European copper and bronze implements are cast, not hammered; but in the cliffs

* This paper was found ready typed for press among Mr. Reid's papers after his death. It is printed as he left it, with one change in punctuation and three small grammatical corrections.—W.R.

of Mullion, in the Lizard peninsula, narrow veins of native copper (without tin) can be seen in the rocks between tide-marks, and one mass found in the mines weighed 104 lb. In this district copper implements, belonging to the Stone Age, might be found. Native copper also occurs in the St. Just district and near Camborne in considerable masses; but apparently always more or less mixed with tin-ore.

The vivid green and blue ores, which occur near the surface, render copper the most easily recognisable of metals in the field. These ores would be the easiest, and the first, to be smelted, and anyone seeing the green stain would know it again in a new district. One of these green ores, malachite, is a beautiful stone, common in the Cornish cliffs, and likely to be collected for ornament or pigment before its use as copper-ore was known. In these cliffs streaks of vivid green mark the position of copper-lodes, and the lodes are very easy to work.

It would soon be noticed that Cornish "copper," though extremely variable, was often much harder and tougher than foreign copper, and would take a better cutting edge; the reason being that, except in the Lizard, all the Cornish copper-lodes found in the cliffs contain tin also. Tin-ore, however, is one of the most difficult ores to recognise (except when found in big crystals); it is very variable, but is usually dull or resinous-looking, and exceedingly like the worthless schorl and wolfram with which it is mixed. It undergoes no change under the influence of the weather; consequently a tin-lode shows neither characteristic stain nor peculiar taste. A little copper or iron, almost invariably present, entirely masks the tin, so that even within the last fifty years lodes have been worked for copper with no knowledge that they contained tin also, and now the waste is being gone over again to extract the tin.

Tin-ore, being un-metallic looking and useless as pigment, it would probably be long before any direct connection was traced between the dull-looking heavy "tin-stone" and the whitish metal sometimes obtained from poor copper-lodes. But when this discovery was made there would soon be a complete revolution in the methods.

Tin-lodes are such extraordinary mixtures, and the ore is so often spoilt by the presence of arsenic, tungsten, uranium, etc., even now difficult to remove, that the deliberate manufacture of bronze from the two pure metals, mixed in definite proportion, seems to imply a far later and higher stage than the chance smelting of "bronze-ores," from certain selected copper-lodes known to yield metal of special toughness.

The stages in the discovery might be somewhat as tabulated below, and these stages might be passed through independently in several countries where mixed tin and copper ores are found:—

1st Stage.—Cold-hammered metal—meteoric iron, native copper, perhaps gold—really belongs to the Stone Age, the metal being treated merely as tough shining stone, which could be beaten into shape, though not flaked. Only native metal used, and no metallurgical process or heat employed.

2nd Stage.—Use of fire to anneal or to soften metal for hammering. A great advance; but not clear how this would be reached, unless the hardening of wooden spears by fire led to it.

3rd Stage.—Discovery that copper was fusible and could be cast. Discovery that malachite, always associated with native copper, produced copper also. This stage was probably connected with the invention of pottery, as some sort of crucible or furnace would be needed.

4th Stage.—Discovery that certain copper-lodes in the Cornish cliffs yielded copper (bronze) of an exceptionally tough quality, and that this bronze was a valuable article of exchange, like as good chalk-flint had been.

5th Stage.—Cornish copper proving to be extremely variable, it was found that certain lodes in the cliff yielded red copper (Lizard), others yielded tough copper or bronze (St. Just, St. Ives, Mount's Bay), and still others white copper or tin (Cligga Head and St. Agnes). The red copper was too soft, and tools became blunt; the white copper was brittle and the tools chipped or broke. All damaged tools were re-melted, with the surprising result that the mixed metal was better than either.* This would lead naturally to the deliberate mixing of the two metals.

6th Stage.—It was discovered that the bronze was whitest where there was little copper-stain, and this peculiarity would soon be associated with the large brilliant faceted crystals of tin-stone occurring at Cligga Head, St. Just, and St. Michael's Mount.

The mines up to this stage were entirely in the lodes seen in the cliff. The export trade was carried on by coasting vessels, for the deep, densely-wooded, and marshy valleys made land-carriage very difficult anywhere near the coast.

7th Stage.—Gold-washers on the open moors discovered that with the gold occurred grains of heavy tin-ore, like that of the lodes but of better quality, more easy to obtain, and always yielding tin without admixture of copper. For export to countries yielding copper, tin alone was required. The reduction of weight would amount to 90 per cent.—an important consideration, as it would favour the introduction of land-carriage instead of a very dangerous coasting voyage round the Lizard. The inland position of the first shallow stream-tin works on the open granite-moors near the watershed would also render land-carriage more easy and the sea less convenient of access. Copper-lodes were abandoned and alluvial washing alone undertaken, as long as the stream-tin was obtainable in quantity close to the surface. This was the stage reached in Caesar's day, when tin was exported but copper was imported. Copper pyrites, which forms the inner parts of the lodes, was probably a useless ore to the natives, who could only work oxides and carbonates.

8th Stage.—Alluvial deposits exhausted, and lodes again worked. But the copper and tin are treated separately. This change commenced about three centuries ago, and was completed a few years since, when the last alluvial works were abandoned.

CLEMENT REID.

REVIEWS.

Researches into the Transmission of Culture.

Journal of the Manchester Egyptian and Oriental Society, 1915-16. Manchester: University Press. 1916. 5s. net.

A very interesting volume. It contains three important articles. M. Alphonse Mingana writes on the "Transmission of the Koran," in which he comes to the conclusion, after examination of the traditions recorded by Mohammedan writers, that very few oracular sentences, if any, were written during the Prophet's life, but that the book, as we now have it, was a subsequent compilation by various writers. Very little of it, therefore, is authentic. Professor E. H. Parker discusses the "Origin

* The proportion of tin to copper raised in Cornwall between 1771 and 1838, when both metals were being mined on a large scale, was about 1:2. The tin, however, includes the alluvial workings, which are not separated in the statistics. Probably the proportion from the lodes alone between those dates was about 1:3. The earlier workings, however, were in the enriched upper part of the lodes, where the copper is concentrated, though the amount of the insoluble tin remains about the same. It is possible, therefore, that the proportion of tin to copper found in the early bronzes was merely the result of chance mixture and constant re-melting of damaged weapons, till they approached the average metallic contents of the ore found in the easily accessible part of the lode near the surface.

of Chinese Writing," discrediting altogether "the attempts to prove that the Chinese "derived their primitive pictographs from the Akkadians or Sumerians of Babylonia," and being of opinion on the evidence that the peoples now assimilated more or less finally by the superior tribe of the Yellow River, who founded the Chinese Empire, have probably been where they now are for countless ages, "and have "worked out their own elementary script, no other nation within a thousand-mile "radius of them having given them any evidence of rival records at all up to, "say, 150 B.C."

This seems in diametrical opposition to the opinion of his colleague, Professor Elliot Smith, whose argument, in his able article which follows, on "Ships as Evidence of the Migration of Early Culture," logically leads to a denial of the possibility of anything being invented more than once, and who traces all culture to Egypt, or to a comparatively limited district of which Egypt and Mesopotamia represent the two limits. Similarity of form and use in weapons, implements, and other characteristic objects is doubtless to be found in many quarters of the globe. But does mere similarity prove transmission? Even when accompanied by apparently irrelevant details, is it conclusive? What is necessary is historical proof. Professor Elliot Smith is anxious to shift the *onus probandi*. It cannot, however, be escaped; for it lies not on those who challenge, but on those who assert an affirmative proposition. His theory is fascinating: the evidence on which it rests is, as yet, far from complete.

In the Report which precedes these papers, an account is given of a lecture by Professor G. Unwin on "Eastern Factors in the Growth of Modern Cities." The lecture was devoted to working out the evidence of the cult of St. Nicholas of Myra in East and West. Research on church-dedications often leads to discoveries valuable not merely to the antiquary, but also to the student of wider problems of Anthropology. But a caution is perhaps necessary against assuming St. Nicholas to be always the patron of seamen and the successor of Poseidon. E. S. H.

American Indians.

Miner.

The American Indians North of Mexico. By W. H. Miner. Cambridge University Press. 7

This little book contains six chapters (150 pages), a few pages of notes, bibliography, and index, one illustration, and one map. Apart from general matter, only the Plains Indians and those of the South-West come in for special treatment. The author has shown boldness in attempting to treat a very large subject in such very small compass, and to some it will seem that his omissions are more conspicuous than his inclusions. The book is readable, but is too closely packed with facts to be stimulating. As an introductory sketch, however, it may serve the purpose for inducing some readers to follow the subject at greater length.

H. S. H.

Dravidian Problems.

Elmore: Richards.

Dravidian Gods in Modern Hinduism; A Study of the Local and Village Deities of Southern India. By Wilber Theodore Elmore, Nebraska University Studies, January, 1915. 8

Side Lights on the "Dravidian Problem." By F. J. Richards. Madras Literary Society and Auxiliary of the Royal Asiatic Society:

Dravidian problems in India have not received the amount of attention in the past that their importance merits. In making this statement I am not unmindful of the excellent work which has been done by many scholars, both Indian officials

and private investigators. But the relation of Dravidian culture to the history of civilisation as a whole is of such crucial significance that more light must be shed upon the early history of India in Dravidian and pre-Dravidian times before it will be possible to view the development of civilisation in its true perspective.

The chief importance of the two essays under review is the indication they afford of the growth of interest in these vital problems. Mr. Elmore's thesis may be regarded essentially as an elaboration of Bishop Whitehead's report upon "The Village Deities of Southern India" (*Bull. Madras Government Museum*, Vol. V, No. 3, 1907). Having lived in intimate contact with the Telugu people since 1900, except during 1909-10, when he sat at the feet of Professor Hutton Webster in Nebraska, the American scholar was able to gain the confidence of the Dravidian people and to collect at first hand a great deal of invaluable information, which he has woven into the texture of the body of knowledge collected by earlier investigators, to whose work he gives full bibliographical references. The research is quite local in character; Mr. Elmore records his results and discusses their significance only from the point of view of their development on the spot, without any help or interference from the rest of the world. This, of course, is the attitude one would expect from a disciple of Dr. Hutton Webster's. But while the absence of any attempt to link up these local events with the great intellectual movement of the world at large means that Mr. Elmore has refrained from reaping the rich harvest which his careful researches have earned, it is not for his readers to complain if he leaves it to them to do the garnering.

To one who is acquainted with the earliest cultures of the Southern Asiatic and North-Eastern African littorals the fundamental unity of the customs and beliefs at once impresses itself upon the attention. It reveals a community of origin which is as clearly apparent as the racial kinship shown in the physical characters of a large section of the Indian people and the members of the Brown Race living further west. But it is unlikely that this undoubted racial affinity affords the whole explanation of the remarkable identities of customs and beliefs that are found in Dravidian India and in East Africa. These are due in part to cultural contact after the spread of the eastern wing of the Brown Race into India.

What renders the detailed information collected by Mr. Elmore peculiarly valuable and interesting is that it illuminates relatively primitive beliefs and practices, the meaning of which is at the present time being elucidated from another side by the intensive studies of the earliest Egyptian literature (especially by Sethe, Alan Gardiner, Breasted, and Blackman) and Baganda analogies (Roscoe, Seligman, and Murray). The same conception was entertained in Dravidian India and in Egypt during the Pyramid Age of the possibility of animating a stone or pottery model of some deceased person. In both places this process of animation was effected by a priest who performed certain ritual procedures to enable the breath of life to enter the stone or pottery figure; the vitalisation was completed by incense-burning and the pouring out of libations, the evolution of which practices in Egypt has been explained by Mr. Aylward Blackman by quotations from the Pyramid Texts and other early Egyptian literature.

The other ritual procedures of the Dravidians are also clearly inspired by western motives. The attention of the deity is attracted by the blowing of a conch-shell trumpet or by beating a drum, and consciousness is restored for the time by offerings of blood, which is the vehicle of the feelings and the will. As in Egypt, the deity is some deceased person who has been restored to life again; and for the continuance of this existence is wholly dependent upon the living, without whose supplies of food and drink the maintenance of "life" is impossible. Nor can the deity become animate without incense and libations and the ritual of conveying the breath of

life. Both in Egypt and India the statue itself was not the object of worship, but merely the body which could at times become animated by the spirit of the dead.

It is also significant of these early western sources of inspiration that among the Dravidians most of the deities were female. For, as I have explained elsewhere, there are reasons for believing that the earliest deities were personifications of the female reproductive functions, and that they were originally developed somewhere in the region of the Red Sea.

In addition to the belief that stones, whether hewn or not, may become temporarily animated by the spirits of the dead, the Dravidians also believe in the petrification of living beings (p. 69). The story is completely rounded off when such a petrified human being becomes the actual dwelling place of its own spirit, and the unshapen block of stone is carved into a statue of the deceased. Such statues may have temples built around them; and it is a matter of peculiar interest to note that such structures in many cases conform in all essential respects to the type of dolmens (see Plate V).

Further information upon this subject has recently been given by Mr. A. H. Longhurst in the extremely interesting *Annual Report of the Archaeological Department* (Southern Circle, Madras) for the year 1915-1916, p. 29. Real dolmens were made, as in the Mediterranean area. Sometimes at later periods these ancient dolmens were converted into hero-shrines, crude representatives of the chief or warrior being placed in the dolmen. In other places the dolmens were converted into Siva shrines, the stone linga and yoni being placed in the western chamber of the dolmen, where in other cases the statue or bas-relief of the deceased was housed. Mr. Longhurst has made the interesting suggestion that the so-called Dravidian type of South Indian temple may have been derived directly from these dolmens.

These facts afford remarkable confirmation of the views which I set forth in 1913,* that the dolmen represented the serdab or statue-chamber of the Egyptian tomb or, in the case of the dolmens with two or three chambers, the western one was the serdab. The plates (I-IV) published by Mr. Longhurst indicate how close the analogies are.

Mr. Richards "cannot say whether there is any evidence to corroborate the "apparent relationship of Indian and Mediterranean dolmens" (p. 11); but his claim that "the Megalithic Art of Europe, North Africa, and Syria was probably "the parent of the tomb architecture of Egypt," shows a strange disregard of chronology and a reversal of cause and effect. On the next page he quotes with approval Jouveau-Dubreuil's opinion that "no foreign element has ever been introduced into Dravidian architecture," which is obviously untenable. Mr. Richards says, "the resemblance between the Dravidian *Gōpuram* and the pylons of Egyptian temples had led to the conjecture that the one is derived from the other. "Unfortunately they are separated by an awkward chronological gap too large for "a scientific mind to leap over" (p. 12). But even the ethnological mind finds no difficulty in jumping over the "awkward chronological gap" that intervenes, say, between the British Museum building in Bloomsbury and the classical Greek edifices to which it is affiliated. The fact that the present *Gōpuram* are much later does not dispose of the possibility that they were preceded by series of temples made of flimsier materials which were inspired directly or indirectly from Egypt. There is a similar "awkward gap" between the Soudanese and the Egyptian Pyramids. But does anyone doubt the derivation of the former from the latter on that account?

* "The Evolution of the Rock-cut Tomb and the Dolmen," *Essays and Studies presented to William Ridgeway*. Cambridge, 1913.

All of the varieties of southern Indian architecture clearly bear the impress of their western origin. The dolmens of India and the Mediterranean types, the Dravidian *Vimānam* and the Babylonian *Ziggurat*, and the *Gōpuram* and the Egyptian temple of the New Empire type, are each of them linked to its fellow by definite bonds of affiliation.

But these connections with the west are substantiated not merely by resemblances of a general order in the ritual and beliefs associated with "idols" and in the structure of the tombs and temples, but also by many unessential and wholly arbitrary details which, like vestigial remains in biology, afford the most definite and convincing evidence of genetic relationship. Such, for instance, is the custom of offering as a sacrifice the bleeding leg of a buffalo, just as in Egypt during the Old Kingdom the leg of an ox was presented. The remarkable beliefs concerning the evil eye and the use of ithyphallic scarecrows are further illustrations, picked at random from the scores of instances of peculiar customs which Mr. Elmore has cited.

Mr. Elmore lays great stress upon the malignant nature of the Dravidian deities (p. 143), who are said to be mostly the ghosts of wicked people "with a grudge against the world which used them so badly, and so return to get satisfaction" (p. 144). But this hardly applies to some of the cases of deification in recent times to which he refers as instances of exemplary altruism. This theory of ghosts is so often set forth as an explanation of fear of the dead in all parts of the world that one would like to have fuller information from Mr. Elmore in substantiation of his opinion. For in several places (Egypt, Indonesia, and Japan, for example), where the investigator has been able to penetrate into the real psychology of the people, it is not animosity, but undue affection of the dead for the living, that is to be feared. And it is the most beloved friends rather than the enemies of the dead who are most likely to have reason to be afraid. In other words, when the dead is about to take flight to the other world, wherever it may be, he will endeavour to steal the "soul-substance" of his dearest friends, so that even in death he may not be separated from them. The living, according to this view, have good reason for being afraid; but it is not the hatred but the affection of the dead that threatens their lives. Much of the confusion in the Dravidian beliefs, the undisguised animosity and vindictiveness, intermingled with the more benevolent way of inflicting harm, may possibly be explained by an imperfect appreciation of the thin dividing line between the kindly and the malicious ways of doing a thing which, in either case, is unpleasant, and has a malignant look.

Mr. Richards tells us that he has "scampered erratically over the greater part of the earth's surface in his quest for light on the Dravidian problem." This is a not unfair description of an essay which lightly skims the surface of conventional opinion over the whole field of anthropology, archæology, ethnography, and sociology, so far as these relate to Dravidian India.

I have already cited two examples of his argument, which he himself defines when he claims that "he rejects the dogma that 'independent origins' are impossible" (p. 5). As an academic possibility, and quite apart from the disconcerting evidence of facts, such a confession of faith is unimpeachable. But to the multitude who share this soothing belief, it is interpreted as meaning that in every case the invention of any element of culture must be sought locally. This also is a right and proper attitude. But the transition from admitting the possibility of local evolution to the assumption that this process did actually occur on the spot is perilously easy, and both Mr. Richards and Mr. Elmore have slid from the attitude of critical impartiality into the position of partisans.

Mr. Elmore does not discuss the wider bearings of his results except by implication. For he devotes a great deal of attention to the development of new deities, of which process he gives chapter and verse. But if he intends his readers to assume that such instances really explain the origin of Dravidian customs and beliefs, he is making large demands upon their credulity. The creation of these new deities is determined entirely by the body of beliefs already in existence; the new goddesses are true to the type of their predecessors; they are frankly imitations of of them. These events shed no more light upon the history of Dravidian religion than the establishment of a new factory for making matches does to illuminate the evolution of the match.

In spite of his neglect of the discussion of the wider bearings of his evidence—or perhaps even because of it—Mr. Elmore's work is most welcome, for it provides the kind of information that is so difficult to obtain, and of priceless value when it has been obtained.

G. ELLIOT SMITH.

ANTHROPOLOGICAL NOTE.

ACCESSIONS TO THE LIBRARY OF THE ROYAL ANTHROPOLOGICAL
INSTITUTE.

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(Donor indicated in parentheses.)

An Alphabetical Index to the Classified Catalogue of the Library of the Director-General of Archaeology, India: Part I. Author Index. Part II. Subject Index. By M. N. Basu, B.A. 10 x 7. 161 pp. and 301 pp. Government Printing, India. 5s. 6d. and 10s. (The Director-General of Archaeology.)

Primitive Ritual and Belief. By E. O. James, B.Litt., F.G.S. 7½ x 5. 239 pp. Methuen & Co., Ltd. 5s. net. (Publishers.)

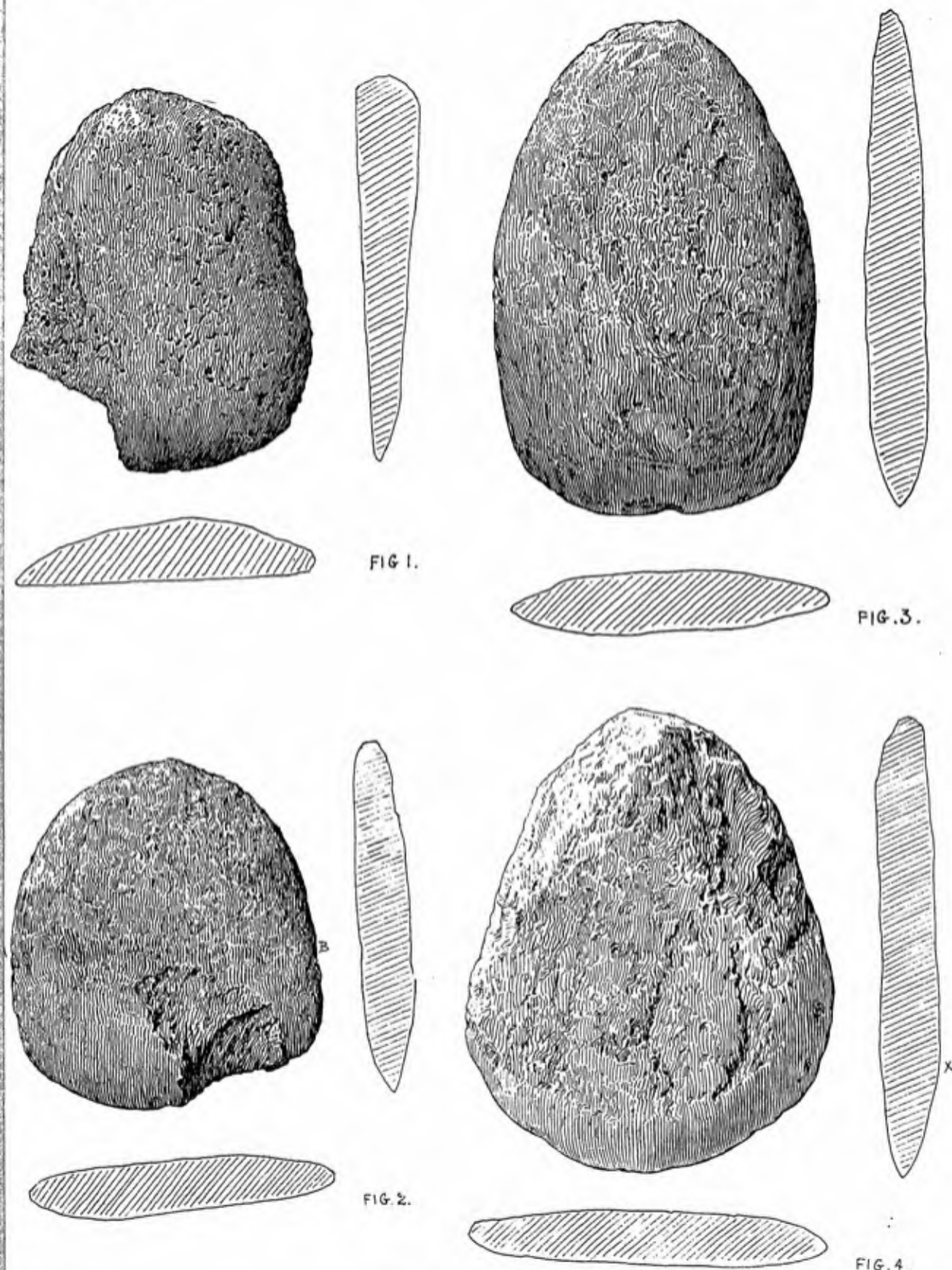
Tools and Weapons Illustrated by the Egyptian Collection in University College, London, and 2,000 Outlines from Other Sources. By W. M. Flinders Petrie, F.R.S., F.B.A. 12½ x 10. 65 pp. 79 plates. British School of Archaeology in Egypt. (The Author.)

Round About the Torres Straits. By Rev. Gilbert White, M.A., D.D. 7½ x 5. 95 pp., illustrated. Society for Promoting Christian Knowledge. 2s. (Publishers.)

Bijāpūr and its Architectural Remains, with an Historical Outline of the Ādil Shāhī Dynasty. By Henry Cousens, M.R.A.S. 13 x 10. 132 pp. 148 plates. 28 illustrations in the text. Government Central Press, Bombay. 3l. 1s. 6d. (The Secretary of State for India.)

Pastels from the Pacific. By Frank Lenwood. 8½ x 6¾. 219 pp., with illustrations in colours and black and white. Oxford University Press. 7s. 6d. net. (Publishers.)

Archæological Survey of India. South Indian Inscriptions. Vol. II. Part V. Pallava Copper Plate Grants from Velurpulayam and Tandantottam. By Ras Sahib H. Krishna Sastri, B.A. 41 pp. 2 plates. Government Press, Calcutta. 3s. 3d. (Superintendent.)



STONE IMPLEMENTS.

ORIGINAL ARTICLES.

Queensland: Archæology. With Plate B.

Ling Roth.

Note on some Large Stone Implements from Queensland. By **10***H. Ling Roth.*

These implements, which are of interest on account of their size, were obtained by Mr. E. Couchman in 1887-8, when they were ploughed up by his men in the land, since known as the "Queensland Sugar Plantation," on the south branch of the Johnstone River, on the Pacific Coast of Queensland. The ploughs were working to a depth of 15 to 18 inches, being drawn by six horses each. This land, the soil of which consists of a deep black mould, had been cleared of dense "scrub" six to seven years previously. From that time up to the time of the find it had only been touched by hoes, with which holes about 8 inches deep had been made for planting sugar-cane cuttings. The stones were found at the first ploughing. They have been in Bankfield since 1901, when the late Dr. F. W. Rudler kindly examined them for me. In the illustrations the stones are all shown with the cutting edge pointing downwards.

FIG. 1.—Dr. Rudler examined a section of this stone under the microscope, and said it "shows a rock decidedly of igneous origin, but so weathered and altered " as to render it difficult to say in precise terms what it originally was. I think, " however, that " you may fairly " regard it as an " altered diabase."

This implement is peculiarly shaped, being rubbed to a smooth, flat surface on one side. The other surface is well ground, but still shows the natural pitting in considerable quantities. Dimensions, $5\frac{5}{8}$ in. by $4\frac{3}{8}$ in. by $1\frac{1}{8}$ in. (13.5 cm. by 10.6 cm. by 2.85 cm.). The large fracture shown in the illustration is an old one.

FIG. 2.—An argillaceous grit. Dimensions, $4\frac{5}{8}$ in. by $4\frac{1}{8}$ in. by $1\frac{1}{8}$ in. (11.7 cm. by 10.5 cm. by 2.7 cm.). Is well ground towards the cutting edge, and shows

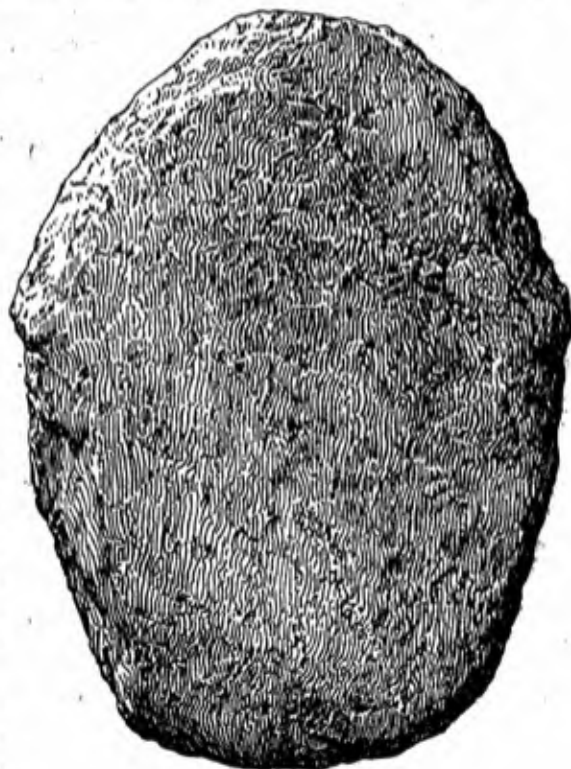
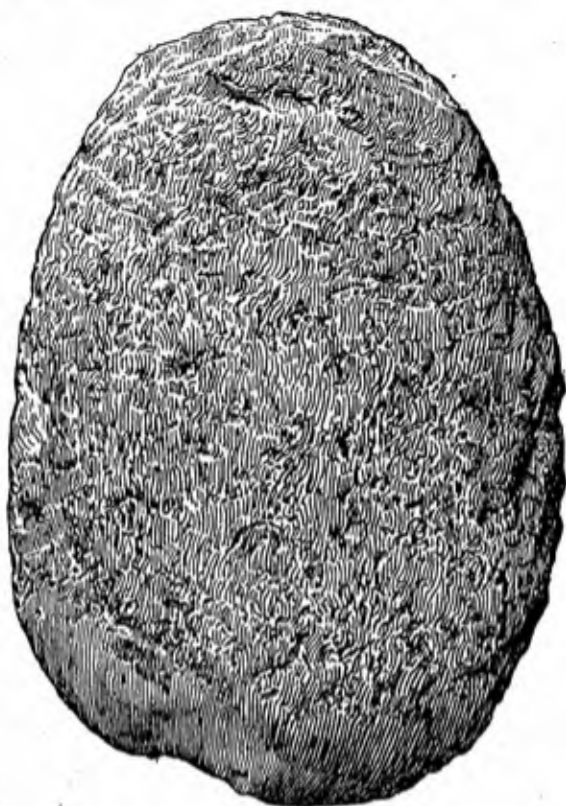


FIG. 5.



very distinct traces of artificial grooving for hafting on both surfaces A to B, and round back to A, but not on the edges. It is the only one of the six implements which shows such signs.

FIG. 3.—A shale. Dimensions, $6\frac{1}{2}$ in. by $4\frac{9}{16}$ in. by $1\frac{5}{16}$ in. (16.5 cm. by 10.9 cm. by 2.9 cm.). Of very regular shape and quite the most regular of the lot. Well ground all over except slightly towards the upper end. The fracture on the cutting edge is old.

FIG. 6.

FIG. 4.—A shale. Dimensions $6\frac{1}{2}$ in. by $5\frac{5}{8}$ in. by 1 in. (16.5 cm. by 13.5 cm. by 2.5 cm.). Except at the cutting edge it has been left very much in the rough. There is almost a shoulder on one surface (x). The cutting edge is much cross-striated, and gives the impression of being in process of regrinding after considerable wear.

FIG. 5.—A micaceous grit. Dimensions $7\frac{1}{8}$ in. by $5\frac{1}{8}$ in. by $1\frac{3}{8}$ in. (19.8 cm. by 14.8 cm. by 3.5 cm.). Only the cutting edge is fairly ground, the rest of the surface being left in the rough. The cutting edge shows signs of wear, and has a recent fracture.

FIG. 6.—An arenaceous shale. Dimensions $8\frac{3}{8}$ in. by $5\frac{1}{8}$ in. by $1\frac{7}{8}$ in. (20.8 cm. by 15.1 cm. by 3.1 cm.). Like the above two, except for the cutting edge it has been left in the rough, showing original pitting. The fracture on the cutting edge has been worn quite smooth.

Writing to me about these implements in August 1901 my brother, Dr. Walter E. Roth says: "The stone axe-heads from the Johnstone River are not used at the present day (indeed, within my district at the present day I can safely affirm that no stone axes are used). Within the next few weeks I propose looking for the quarries whence these stones are derived—one, I believe, is somewhere in the neighbourhood of Mount Mackay, close to the Tully River, the

" other about 90 miles (Mount Elsie Station) south of Charters Towers—which
 " would appear to have afforded the supply for these particular portion-of-east-coast
 " weapons. I myself have got them from Herberton. They are large and flat
 " with a central groove, and so far it has been a puzzle to me how this groove has
 " been made. Sometimes both extreme points are sharpened, while lower down the
 " coast (*e.g.*, Herbert River), the groove is markedly to one (the thick) end, and the
 " stone more wedge-shaped." In his *Ethnographical Studies*, p. 151, he men-
 " tions one in his possession, "found in the neighbourhood of Boulia, measuring
 " 9 inches in its greatest diameter," which is considerably larger than any in
 the collection under review. He has since informed me that he was unable to undertake the expedition to the quarries as contemplated. In so far as I can ascertain no such large dressed stones are found elsewhere in Australia, but we have a very similar implement (Fig. 7) from Lifu, Loyalty Islands, in the Kennedy Collection, Bankfield Museum, which Dr. Hickling informs me is of impure jade. The dimensions are $8\frac{1}{4}$ in. by $5\frac{1}{2}$ in. by $3\frac{1}{2}$ in. (21 cm. by 15 cm. by 2.5 cm.). The cutting edge, following the natural fracture of the stone, is curved, as shown by the

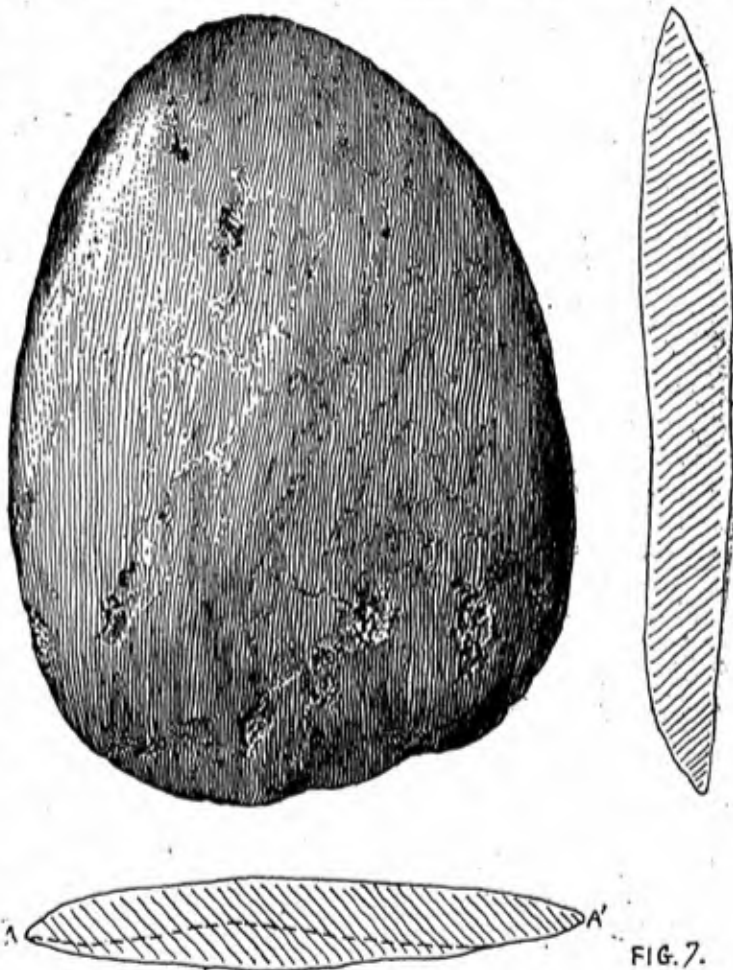


FIG. 7.

line A A' A'' in the cross section. It is not as large as some of the big New Caledonian stones fastened at right angles to a handle by sinnet passed through two holes in the stone.

H. LING ROTH.

Borneo: Technology.

Evans.

A Brass Drum from Borneo. By Ivor H. N. Evans, B.A.

I purchased the brass drum figured in the illustration at the village of Koung Ulu, in the Tempassuk district of British North Borneo, in 1915. The inhabitants of the village, who are Orang Dusun, were unable to inform me whence

it had originally come, and I doubt if that people are responsible for its manufacture. At the present day, at any rate, they only cast very small articles in brass.

The height of the instrument is 36.7 cm. and the diameter of its base 20.4 cm., while the tympanum has a diameter of 23.6 cm. A dot marks the centre of the tympanum face, and this is surrounded by four sets of lightly marked concentric circles. There is a small hole towards the edge, which appears to have been made with a drill. The lower part of the tympanum fits inside the body of the drum, and was formerly secured by three screw-rivets, one of which is now missing. The thread on these appears to be a left spiral. The line of juncture, as can be seen in the illustration, is covered on the outside by a band of dark-brown bees'wax. The body of the instrument is composed of two sections, a top and a bottom, these parts meeting outwardly at the centre line of the "waist." As far as can be seen on examination, the joining was effected by brazing a band, partly projecting, internally round the base of the top section, the bottom section being attached to this

by means of three equi-distant rivets. The external "seam" is partly filled in with the alloy used for brazing. The four handles, which are perforated, appear to have been cast in one piece with the top section of the drum, the perforations having been made in the casting, and not subsequently. In two places, owing to slight imperfections in the work, parts of the pattern, which should obviously be open, are filled with a film of metal. The *cira perdata* process seems to have been employed in casting the various sections of the instrument.



derived from some kind of leaf. The four human figures towards the base are all identical. One noteworthy point about them is that the ends of the clothes on the thighs are turned upwards in a way which is reminiscent of that seen in representations of the mythical characters of Burmese legendry and of the figures used in Siamese and Malay shadow-shows.

I. H. N. EVANS.

Finland: Magic Ritual.

The Magic Birth "Motif" in the Kalevala. By Wilfrid Bonser, B.A.

There are three examples of this *motif* in the Kalevala, all of which in one way or another conform to the "Aryan expulsion and return formula." The three examples occur in Rune 1, in the case of Vainamoinen; in Rune 31, in that of Kullervo; and in Rune 50, where the Wonder-Child is born.

* A flower with a long pistil and rather loosely-spread petals (*Hibiscus*?).

Vainamoinen is born supernaturally. His mother, Ilmatar, bears him for 700 years before she is delivered, and at the end of that time Vainamoinen, now fully grown in mind as well as in body, takes matters into his own hands. Many years of parturition appear to be a sign of divinity, since there are other examples of it in legend: Aditi bears Vishnu for 1,000 years, and Rhea, according to Herodotus, bears Isis for so long that the latter is already about to become the mother of Horus by her brother Osiris before she herself is born.

Kullervo is, like the Esthonian Kalevipoeg, a posthumous son. While yet an infant, he breaks his cradle, and, like Herakles, rends his swaddling-clothes. Born in captivity, he is duly exposed by his captors, but miraculously survives all their attempts to kill him. His subsequent career agrees also in many particulars with the formula mentioned above, but this is beyond the scope of the present article, which deals only with birth.

The remaining example comes at the end of the "Kalevala," where the virgin Marjatta conceives through swallowing a berry. Rune 50 is the epic narration of the conquest of Christianity over the older religion as personified in Vainamoinen, the master-wizard. While it has much in common with the usual pagan Wonder-Child story, its similarity to the Gospel story will be seen at once, despite the difference in names. Marjatta may be the same name as Mary, but it is more probably a diminutive formed from the Finnish *marja*, a berry. Stress is laid on the high quality, as well as the purity, necessary for the virgin-mother.

Marjatta is delivered in a stable. The horse breathes upon her body, and so keeps her warm. This serves the same purpose as the vapour bath which she had desired to have at the time, but which was denied her by Ruotus and his wife.* There is a Persian custom at childbirth which bears a curious analogy to this. "On those occasions," says Bâji Yâsmin, "when great pain ensues, it is necessary, for the purpose of alleviating the symptoms, to pour barley into her [the mother's] lap, and bring a horse to eat it there; for seven days she must be called Mariam, and her own name not mentioned, otherwise she will fall sick and be in danger."

The berry which Marjatta swallowed has been the occasion of some discrepancy among both translators and commentators. Crawford says that it looked like a cranberry and tasted like a strawberry; Kirby calls it a cranberry; Compagnoni, a blackberry; and Hartland the red bilberry. All these, with the exception of the blackberry, grow on low plants; the "Kalevala" says that it had to be brought down with a stick as it was too high to be picked, and as it grew "on a tree too weak for climbing." The cause of the difficulty is evidently that there is no exact English equivalent. The word in the original Finnish is *punapuola*, which is a kind of cranberry, but it is smaller and sweeter than those which are found in this country. Mrs. Tweedie, speaking of the food of the modern Finns, says that "there are numbers of wild berries in Finland; indeed, they are quite a speciality." She then gave a list of them, which, though it does not mention the berry in question, includes the strawberry, red whortleberry, and cranberry, besides several for which she gives no English equivalent.

The motif of conception through the eating of fruit is also found in the legends of other races. Hartland, in the "Legend of Perseus," gives a close parallel. In China, the late Manchu dynasty is said to have had its origin in a similar way. Its ancestress was Fokolon, a heavenly maiden, who, after bathing in a pool, found on the skirt of her garment a red berry that had been placed there by a magpie. By eating it she became the mother of Aisin-gioro, the hero who was to restore peace to his people. Similar stories come from India and elsewhere.

* It is still the custom of women in Finland to repair to the bath house in order to facilitate delivery.

Another example, though slightly veiled by the editor, occurs in the 30th chapter of Genesis. It is the story of how "Rachel ate of the mandrakes which her sister had given her, and having eaten of them, she also conceived, and bare a son, and she called his name Joseph."* Sir J. G. Frazer thinks that in the original narrative, Rachel's pregnancy was due merely to her eating the yellow berries of the mandrake.

In Irish legends, the berries of the mountain-ash or quicken-trees have magic properties, and are the food of the fairies, jealously guarded from mortal taste. These fairy berries, which, like Iduna's apples, have the gift of endowing the eater with eternal youth, are not bitter like those of the ordinary mountain-ash, but are said to have a delicious flavour, and might therefore be well compared in taste to Marjatta's berry. The mountain-ash, as well as the nearly-allied sorb-tree, is several times mentioned in the "Kalevala"; its berries were consecrated to Rauni,† the consort of Ukko, and part of the sledge of Vainamoinen, the great enchanter, was made of its wood. Since this tree, in legend, is especially connected with shepherds, and regarded by them as having magical properties to protect their sheep and cattle, one would expect the shepherdess, Marjatta, to have swallowed one of its berries; but the Finnish story has made its own selection:

WILFRID BONSER.

Polynesia: Technology.

Matau Hokori. By H. G. Beasley.

Supplementary to Mr. Ray's article in MAN, 1917, 130, on "The People of Greenwich Atoll," I venture to send you a sketch of the large wooden hook



(*Matau Hokori*) that he mentions, together with a few remarks thereon. Mr. Ray shows that the arts and crafts of these people (who a few years ago numbered 150†) are mainly negative, and as specimens are practically unknown, it may not be out of place to record at least one authentic object from this locality. This hook I obtained at the sale of Commander Erskine's collection, and it bears the original label.

It is, I think, the crudest specimen of any that come from the Pacific, formed originally from a natural root of pale-coloured wood, of light weight; the maker hardly troubled to remove the notches, and in many places has left the bark intact. The barb is of similar wood, and shows a certain amount of skill in the way it is scarfed to the shank, and appears to

have been fashioned with some blunt instrument and afterwards finished with a rasp. The lashings of the barb as well as all that remains of the snood are of two-ply twisted sennit of rough and coarse workmanship. The greatest length is

* Frazer: "Jacob and the Mandrakes," in the *Proceedings of the British Academy*, Vol. VIII, 1917.

† In Swede-Lappish *raunna* denotes the mountain-ash; cf. Scots "rowan."

† Brigham: *Index to the Islands of the Pacific: Honolulu*. H.I.

7 $\frac{3}{4}$ inches (18.7 cm.), the width 5 $\frac{1}{4}$ inches (13.3 cm.). Taken as a sample of native skill, the result is poor in the extreme; but such is not surprising, considering the remoteness of this tiny group of islands and the smallness of the population.

HARRY G. BEASLEY.

Ibo: Folk-tales.

Stories (Abstract) from the Anka Neighbourhood (I). By N. Thomas. **14**

W. Thomas.

1. BLIND HUSBAND.

The tortoise took a goat, went to a blind husband and wife. The wife asked her husband where the goat was. The husband said, "She is with the tortoise." She ran after the tortoise. Her husband said, "The goat has gone from the tortoise to the he-goat's." When she found the goat she sat down. She crawled on the ground. The horn of the he-goat pierced her. She found it in the ground. She found the goat was with the he-goat. She dug the goat out and went to her husband. They killed it, shared it, cut up some, put that in the soup, and hung the other in the dry. Her husband took a cloth, tied it to the meat over fire. There were ten pieces of meat. The wife said she would eat five, her husband five. They began to eat. The wife said she had only four; her husband said the same. Who ate the other piece? Quarrel.

The tortoise came again and stole. He took a leg so that the cock laughed; he was waiting to fly away with it. Husband and wife caught the cock; tied it to a stick and said they would kill it. They smelt something in the fire and said perhaps it was their meat, but found nothing. The husband called the cloth. It said it was in the hands of the tortoise.

The tortoise was hiding in a bush. The tortoise ran and met the he-goat planting yams. He said "penis and testicles are too big, tie this cloth." He tied the cloth. The tortoise ran away. The husband and wife came and called the cloth. It answered, "I am on the waist of the goat." Goat jumped and bleated, then dug a hole and covered itself. The wife crawled on the ground. The horn pierced her, she dug it up, tied it with string and went home. "You are to smell and all your children! Let it go."

2. CRIPPLED WOMAN.

A woman with a half hand said she had no father or mother and always walked in the bush. A cat went in bush and saw her. It said, "It is not good to walk in the bush, follow me to my place." The woman said, "No, they will laugh at my half hand." "No, we will pass another road." The cat told her, "Cook boiled yam, mash it."

One day the cat went to the bush, saw the half hand of the woman, picked it up, took leaves. Went home and gave the half hand to the woman and joined it.

One day the old wife of the cat had seen woman and laughed. She took a calabash and stick and told all the women to come on five *eke** and five *oye** days and clap hands in an open place to say who had a half hand.

All the women came and clapped one by one. One woman was left. The cat wife told her to clap; she did. The women said, "We all have hands."

The cat was angry. One day he gave plantain to the new wife to roast, cut up and add palm oil, mix and go to fire, put pot down and small mat near fire; she was to put the other on her body. "When the old wife goes to fetch leaves for food, and she calls you, call her and give her plantain to eat; you don't eat it because you are sick." The cat came, ate plantain without asking and got four

* *Eke* and *oye* (*olie*), two of the days of the four-day week; *afé* and *nhuw* are the other two.

tails. The new wife laughed and called the women to see who had a tail. They came. All the women were ordered to strip. She would not strip and they made her. "That is forbidden," they said, and took her and killed her in the bush.

3. TWO GIRLS.

Two girls went for firewood. They got firewood, one more than the other. They tied bundles. A asked for help to put it on her head. They went back. B said, "Let us wash." "All right." B pushed A into the water and nearly drowned her; then took all the firewood.

A reached a big tree and climbed up. She heard man cutting tree for palm wine and sent him to her home. He told her father. He and her mother carried her out and gave her medicine. They brought the other girl and hanged her. Cuku looked up and looked down and said, "Who gets few things shall not kill one who gets many."

4. ORPHAN.

A man had wife, she had no children. She said she would have a child, and he said he would die if it were true. She said she would die twenty days after its birth, and so it was.

It was a boy; he stayed on a plank; in one day he stood up, for no one looked after him. The boy walked, and no one gave him chop. He went to Obu and saw a pot. He looked in it. The pot broke and a big *eke** came out. He went to the boy; *eke* told the boy not to run; he would kill him if he did; "Take me to the yam store," he said.

Eke called the boy, he was to come on *eke* days. He gave him *okbulukweke* (makes fufu), *ofanweke* (good things). The boy asked for chop and *okbulukweke* made fufu. He asked for children and got eight sons, eight daughters, eight brooms for sweeping house, and eight hoes for the boys!

5. BUSH CAT, MONKEY, ETC.

The tortoise told the bush cat to kill his brother, Nyagu. "When you kill him, take Nyagu's share" (i.e., the leg of animal). When he killed him and they made another's title, the tortoise took all, including the leg. The bush cat cried, "Nyagu, my brother."

The monkey lost its fish; it was stolen. He called other monkeys and told them to swear *iyi*† for it and then hang *ekbili* and *oyolo* (= drumstick [*oyo*]) on the tree. They were to point the hand at them and say, "If I took the fish, may they kill me, if not may they keep still." The thief came and they fell and killed him.

The tortoise came to the market and told the animals, if they fought he could take his foot and tread on a woman. They fought and pushed the woman down and she died. The tortoise denied it when they asked. They pushed the tortoise. He said he would say who was the culprit and said the elephant and the cob. "Why did you say you would kill her?" they asked. "We will kill you." They did so.

The animals held a meeting; one said, "If anyone talks as the tortoise did, let us take it and put it in the water and tread it in the mud; so that we kill it."

One day the hawk and the vulture quarrelled. The hawk said, "If we fight, I can win." The vulture said the same. So they fought, and the vulture won. The hawk cried, "*Iwe, ewe, ewe.*"

* *Eke* python.

† *Iyi*, oath taken on a stone or sacred object.

6. CUMULATIVE TALE.

A woman went to her grandmother's and picked *ɕkwulugede* on the road. The grandmother brought two yams and asked for the *ɕkwulugede*. She said it was not enough. Her mother's mother asked again so she gave her it.

She went to the forge and said to the blacksmith, "Will you take two yams to eat and make me a cooking knife?" "All right," he said. He ate them and made the cooking knife. She went out and cursed him and asked for yams back, "*ɕkwulugede*, my mother's mother gave them to me; *ɕkwulugede*, my grandmother ate my *ɕkwulugede*."

She reached a man clearing the bush for yams; he said he had not a good knife, so he took the cooking knife, cut a bush with it, and broke it. She cursed him, "He broke my knife, the blacksmith ate my yams, my grandmother ate my *ɕkwulugede*." Then he gave her a hooked stick.

She found a man in a tree taking *oto* seed and gave him the hook. The man climbed down and took it and got two seeds with it and broke it. "My grandmother took my *ɕkwulugede*, the blacksmith ate my yams, a man broke my knife." Then he gave her two *oto* seeds.

She found women on the road home, going to market. She told them to eat as they were hungry, and said, "My grandmother took my *ɕkwulugede*, the blacksmith ate my yams, a man broke my knife, a man broke my hooked stick." Then they gave her a bag of salt.

She went on and saw some sheep eating grass. She asked them if they wanted salt and put it down and said, "My grandmother took my *ɕkwulugede*, the blacksmith ate my yams, a man broke my knife, a man broke my hooked stick, the women ate my *oto* seeds." Then the sheep took out their eyes and gave them to the woman.

She went on and saw a worm (*idide*). She said, "You have no eyes. My grandmother took my *ɕkwulugede*, the blacksmith ate my yams, a man broke my knife, a man broke my hooked stick, the women ate my *oto* seed, the sheep took my salt." The worm went into the ground, the woman dug it up and took half, and half went into the ground.

So now when they go to farm they cut the worm in two and half goes in ground.

N. W. THOMAS.

REVIEWS.

South America: Prehistoric Bronze.

Mead.

Anthropological Papers of the American Museum of Natural History. 15
By C. W. Mead. Vol. XII, Part II. New York: 1916.

This is a valuable treatise on a subject about which definite information has been forthcoming only in the last few years. Formerly there was an impression that the ancient folk in South America had used bronze in a vague way by chance of fusion, and it was not until after the French expedition to Bolivia, when M. Adrien de Mortillet collected and analysed some bronze objects, that he was able to announce his conviction that the proportions of tin and copper were intentional.* To those who knew what had been done in metal by the pre-Columbian inhabitants of Mexico, Ecuador, and Peru, this was obvious, and fresh discoveries are constantly increasing our information as to the marvellous skill in combining metals shown in many parts of America.

The lamented Dr. J. B. Ambrosetti published in 1904 his *Bronce en la región*

* At the first meeting of the Congrès Préhistorique de France, Périgueux, 1905.

Calchaqui, with illustrations and analyses of the remarkable bronze plaques* and other objects found by him in Northern Argentina. He figures two pieces of slag "personally extracted from ruins during my expedition of 1896," one at Fuerte Quemada, the other at Tolombon. Analysis gave 3.22 of tin in one and 1.34 of tin, with 0.40 arsenic, in the other. The finding of furnaces, melting-pots, moulds for casting, and slag in the ancient ruins makes it certain that the bronzes were cast on the spot, as described also by Dr. F. P. Moreno at Antofagasta de la Sierra.

Mr. C. W. Mead, Curator of the South American department of the American Museum of Natural History at New York, is now able to present tables of 160 analyses of prehistoric bronze and copper objects from Peru and Bolivia, which leave no doubt as to the intention of the makers. He notes (after Boman, Verneau, and Rivet) the progressive increase in the use of tin from north to south in Peru and gives illustrations of the different types of objects. Having had the good fortune to obtain a copy of the rare *Arte de los Metales*,† Mr. Mead quotes from it to show that before the Spaniards came the Indians knew how to mix tin and copper, taking one pound of tin and from four to eight pounds of copper, according to the variety of the tin, "to give hardness to their instruments and arms, as we use steel or tempered iron, which were unknown to them." Barba was priest of San Bernardo, in the heart of the mining district of Bolivia, and director of the mines there. He gives interesting details respecting the tin mines and the qualities of the metal. The Inca Garcilaso de la Vega also wrote: "They worked with certain instruments they had of copper mixed with a sort of fine brass." In his time tin was often called brass, and Mr. Mead calls attention to the fact that in the Pentateuch bronze is translated brass.

During Professor Hiram Bingham's expedition to the ruins of Machu Picchu, in Northern Peru‡ he found quite a large piece of tin, rolled up like a sandwich, supposed for making bronze. Three bronze axes obtained by him were analysed,§ and Mr. Mead gives the results, with further experiments in making similar axes. These showed that the forging could only be done at a temperature above 500° C., and the axes either forged hot or quenched suddenly and forged cold. If heated and allowed to cool slowly the alloy was extremely brittle and broke in pieces under the hammer.

The Museum contains two of the copper pipes described by Garcilaso as used with the Guayras or clay furnaces, 31 inches and 25 inches long respectively. They are made of rather thick sheet copper, and have a mouthpiece about 3½ inches wide at the rim. Mr. Mead notices especially the copper clamps used to fasten together the great stones at Tiahuanaco, none of which have any trace of tin, although quantities of bronze objects are found there. He says, with reference to Chile, that bronze objects are found in considerable numbers, and in various localities, but at present we have no knowledge of tin there, or only in very small quantities, and he asks: Did the prehistoric people work tin mines of which we are ignorant, or had they discovered copper ores containing as high a percentage of tin as the Cornwall coppers? Or did they obtain it from their northern neighbours? He devotes much attention to Professor Gowland's Presidential address before the Royal Anthropological Institute, "Copper and its Alloys in Prehistoric Times," and adds a bibliography.

A. C. BRETON.

* See MAN, 1906, 102, "Ancient Bronze in South America," with plate of the plaques, including the one in the Cambridge Museum.

† By Licenciado A. A. Barba, Madrid, 1639.

‡ *National Geographic Magazine*, Washington, February, 1915.

§ By Messrs. H. W. Foote and W. H. Buell, *American Journ. Sci.*, August 1912.

Jewellery.

Kunz.

Rings. By George Frederick Kunz. 9 x 6½. Pp. xviii + 381. With 290 Illustrations in colour, double tone, and line. J. B. Lippincott Co., Philadelphia and London, 1917. 28s. net. 16

To his two books (*cf.* MAN, 1917, 49) on the curious beliefs attached to stones and to jewellery, of which stones so often form an essential part, Dr. Kunz has now added a volume devoted entirely to finger-rings, and treating of them in their archaeological, historical, technological, artistic, and sentimental aspects. The new book, although containing a great deal of material, does not pretend to exhaust its subject, for it has had to be prepared primarily for a "popular" audience. But within its covers there is, both in text and in illustration, much that should interest the student in one branch or another of ethnology, either by serving directly as an example or as pointing to some unfamiliar source of possible examples. And it is pleasant to be able to record that the author has continued his practice of citing his authorities for his statements, since the value to the student of such a book as this depends largely on the opportunity it gives him of deciding as to the presumptive merit of his selections.

Few ethnologists can fail to be interested in the finger-ring in some one or more of its many aspects, for it is an object which, as we know from surviving specimens—those made of the less perishable but often less easily workable materials—has served mankind through some thousands of years at least; one which to-day may still be found in use by peoples in almost every stage of culture, from that of the savage to that which we look upon as the highest of modern types; and one which no man or woman need be too poor to own or too rich to wear. It is, furthermore, one which has been used for the adornment of the living and of the dead, and one which has served in ritual, as a safeguard, as a means for the relief or the cure of maladies, as an implement, as the bearer of messages implied or written, and in various other ways, and for various other purposes, while probably more often than not it has been bound up intimately in some way with the individuality of the person possessing it. It would be tedious to point out the various passages of more or less interest to the ethnologist which are scattered through the pages of Chapters I and II, on "The Origin, Purposes, and Methods of Ring Wearing" and "Forms of Rings and the Materials of which they are Made," although special attention may be called to the well-illustrated description (pp. 22-30) of the making of silver jewellery by the Navajo and Pueblo Indians of New Mexico. Chapters V and VI, on "Betrothal Rings, Wedding Rings, and Love Tokens," and "The Religious Use of Rings," contain many passages interesting to the folklorist or the student of religious practices. Of most interest to these, however, are the two chapters (VII and VIII) devoted to "Magic and Talismanic Rings" and "Rings of Healing," in which the author has gathered together a considerable number of legends relating to the magical virtues of certain real or fabled rings, material dealing with various preservative (and a couple of divinatory) practices in which rings are employed, and much concerning rings—such as cramp-rings and rings set with certain substances or engraved with certain formulæ—to which curative powers have been attributed. The student of the development and of the application of design among non-European (or, too, among European) peoples will, amid the large number of rings pictured, find many to engage his attention.

The book, which has been otherwise excellently produced, being on good paper, with clear type and pictures, is marred slightly by a number of what are obviously printers' errors which have escaped the proof-reader's eye. A useful index of the material in it has been provided.

W. L. H.

Anthropology.

Spurrell.

Modern Man and His Forerunners. By H. G. F. Spurrell, M.A., M.B., etc. 17
 London: G. Bell and Sons, Ltd. 1917. Price 7s. 6d. net.

The first portion of this book deals with "The Problems of Anthropology," "The Zoological Position of Man," "Extinct Races and Species of Man and their Culture," and "The Growth of Human Powers and Numbers during the Neolithic Age." In the second portion rather greater space is given to the discussion of "The Origin, Growth, and Spread of Civilisation," and "Man at the Present Day."

As regards the first part, the author is dependent in the main upon well-known facts, but his method of treatment, and his use of his own observations on certain points, raises this part above the level of a compilation. Sufficient caution is not always shown with regard to matters still in debate, as, for example, in the acceptance of an extreme estimate of the antiquity of the modern type of man. It is also going beyond the ascertained facts to say that the Cro-Magnon men "were contemporaneous with the Neanderthal men, the Grimaldi race, the Galley Hill, or 'Thames Valley' race, all of whom reached Europe before them, and very likely other 'races as well.'" In a plate, under the description of the "Neanderthal type," are given the skulls of Trinil and La-Chapelle-aux-Saints, whilst those of Pittedown and Cro-Magnon are figured as representing the "modern type." There are other instances of statements which require qualification, and in which the author has failed to avoid the danger of popularising facts as well as treatment. There is, however, sufficient disagreement amongst authorities, on many points in connection with the history of early man, to make it a difficult matter to ascertain what is the balance of opinion. Dr. Spurrell has not entered on his task without giving attention to the facts, and thought to their interpretation; he has, in the main, appreciated the tendencies of modern investigation, and has avoided gross misconceptions such as are so frequent in compilations done in haste, and repented by the reader at leisure. A tendency to overshoot the evidence is pardonable, since it arises from a certain originality of outlook, and if the author's speculations are sometimes unsubstantial, they are not obtrusively picturesque.

The treatment of the origin, growth, and decay of civilisations is interesting, and the reader is led in a direction which may give him some surprises. Reasoning from well-known historical facts, and from evidence such as is supplied by the daily newspaper, the author arrives at conclusions which can scarcely be said to be in harmony with the spirit of the times, though it is chiefly in the drastic nature of his forecast that he goes beyond the limits of misgivings such as plague all of us at times. His argument is briefly this: An aristocracy of soldiers and hunters imposes its will on an unenterprising agricultural population and the great civilised nation is produced—"civilisation is, when analysed, found to be a system of slavery"; when the aristocracy loses its virility and the masses their submissiveness, decay sets in. To the author the rise of democracy is a sign and a portent, and, presumably, President Wilson's phrase an invocation of world-wide chaos. This proposition is open to attack from so many sides that the author needs more than all the support provided by history and contemporary politics. Whatever may have been the fate of democracies in the past, and however obvious their defects in the present, the view that they emerge as a sure sign of the coming disruption of the civilisation in which they prevail will fail to command acceptance, even amongst those who have few illusions as to the perils of democratic rule.

The causes of the decline and fall of States are so varied and so complex that to put forward one phase in their evolution as destined to be always prophetic of the end, is to minimise the fact that the present and future of a State, or of a civilisation, are built on its own past. If "the basic weakness in civilisation lies in

"the deeply-rooted predatory instinct in human nature," leading in democracies to place-hunting, and a competition amongst demagogues for the favour of the mob, we may still hope that this weakness can be overcome. Much of the source of it will be removed when there has been a toning down of the more glaring contrasts between inherited luxury and inherited squalor. Democracy has failed because it has had to build on a crazy foundation thrown together by a selfish aristocracy or plutocracy, and there is hope for future democracies which may succeed in replacing this jerry-building under conditions which enable the work to be done without collapse of the whole structure of government. Nor need we anticipate that in the ferment of the people it will always be the dregs that will come to the top. It may be, as Dr. Spurrell believes, that the present civilisation, world-wide though it is, will give place, as others have done, to a phase of decay and disorganisation, but to argue that this is inevitable shows a lack of confidence in man's adaptability which is far from being justified by the record of his past outlined by Dr. Spurrell, not without enthusiasm, in the book under review.

H. S. H.

America: Ethnology.

Proceedings of the Nineteenth International Congress of Americanists. 18
Held at Washington, December 27-31, 1915. Edited by F. W. Hodge.
Pp. lviii + 649. Washington: 1917.

This thick volume, a monument of editorial skill and patience, contains much interesting material relating to the archaeology and ethnology of the Americas. Detailed criticism is impossible here, for ninety-five papers were presented to the congress, consisting mainly of first-hand data collected by the authors, given in simple language and admirably illustrated. In fact, this congress justifies its existence by the illustrations in the *Proceedings*. There is a series of "Food Plants of Ancient America," collected by W. E. Safford, chiefly from Peruvian tombs, with their representations in the pottery. Eight distinct varieties of beans were found by the author in one prehistoric grave. Excellent descriptions of the antiquities of Tennessee (two by Dr. G. G. MacCurdy and one by W. E. Myer), show, in the amazing profusion of objects found there, in the many kinds of stone implements and arrowpoints, and the engraved discs of shell, what refined skill the inhabitants had achieved.

The ancient shell-heaps of the coasts of America urgently need co-ordinated exploration before they are destroyed, with all their contents.* In this volume there are detached notes on some of them; in northern Nova Scotia (Harlan Smith) on Long Island and Staten Island (A. Skinner), and by A. W. Butler on those of part of the Atlantic coast of Florida, where he says that the Oak Hill Mound, 20 feet high, covering 4 acres of ground, and practically undisturbed, has been sold to the country for road-making (those near Vancouver, B.C., were similarly destroyed). Valuable information could be obtained by study of the shell-heaps round the whole coasts of South America.

Notwithstanding the supposed troubles in Mexico, the two Government delegates attended the congress, and Señor M. Gamio, Inspector of Monuments, described recent excavations near the site of the great temple. His paper contains a useful plan of the plaza and cathedral, showing the positions where the great sculptured stones were found. Stone skulls were fastened to the walls of one building and may have caused Cortez' companions to think them real. The present Government invites the co-operation of foreign archaeologists in research.

* The archaeological department of the Geological Survey of Canada has been making a list of the shell-heaps of Canada, compiling what is known about their size and general appearance, with references to the literature describing them and the specimens found in each.

Amongst several papers on the Maya region, Mr. S. Morley's on the *hotun* is the most important. He has given this name to the period of 1,800 days (or five times the year's reckoning of 360), which he has discovered to be specially observed by the later monuments at Quirigua and others of the ancient cities, where stele were erected at the end of each of these periods, or dated lintels were placed. His plan of Quirigua shows the sequence of dated monuments there.

Mr. F. C. Speck's *Medicine Practices of the North-Eastern Algonquians* contains some carefully gathered information about the Indian mind and methods, the mixture of superstition with a sensible application of well-tried remedies. Dr. T. Gann's account of the rain ceremony among the Maya in British Honduras has a ritual almost identical with certain ancient religious rites of the Maya, even the names of the gods being retained in the invocations. Twenty years ago a similar ceremony for rain was still performed in a remote part of south-western Mexico.

W. B. Douglass describes enclosures and circles of unhewn stones in New Mexico, with pictographs, in connection with Tewa shrines, and has excellent plans and photographs. A remarkable ancient site in Porto Rico, photographed and excavated by J. Alden Mason, appears to be the most important yet found in the West Indies, and to merit being called megalithic. In addition to six ball courts, there was a square plaza with a boundary of limestone slabs on one side, and on the other a line of immense basaltic boulders. All these had incised pictographs, now much eroded.

Dr. Hiram Bingham's thoughtful paper on "The Inca Peoples," and that by Dr. A. L. Kroeber on "The Tribes of the Pacific Coast," stand out as true and well written statements. Dr. Kroeber notes the importance of wealth in the culture of the Pacific coast. "A poor chief is as unthinkable to the Indian of California as to him of Puget Sound." The man of influence and position is not the man of record in war, but of property.

In the ten papers on "Physical Anthropology" there are interesting data on the present inhabitants of the United States. Dr. A. Hrdlicka discusses "The Genesis of the American Indian," and analyses the physical conditions of "Old White Americans" (of three generations), in whom he fails to find a tendency to develop into a new race. D. Folkmar, in a "Census of Immigrant Stocks," gives the number of foreign-born Germans as 2,759,032, and the total of German stock, 8,817,271.

The British Consul in Philadelphia, in 1915, said that there were over 40,000 British subjects in that city, most of them employed in factories. The recent keeping of the Day of Atonement brought out the fact that there are 50,000 Jews in Toronto. In the Canadian province of Saskatchewan Austro-Germans form 40 per cent. of the population. The future North American will be a composite of European races. Condition of the permanent teeth in more than 2,000 school children of different races is recorded by R. B. Bean, but he does not give their place of residence. Climate and diet affect the teeth very considerably.

A few words must be said about the congress itself, because the Royal Anthropological Institute was sponsor to the previous congress in London, 1912, and should therefore be consulted when it becomes possible to hold another meeting in Europe. Owing to the outbreak of war the Washington meeting, arranged for October, 1914 (when a number of English anthropologists were to attend), was postponed. Then, seeing that there was little prospect of securing delegates from Europe for a long period, it was determined to convene the congress for December 27th-31st, 1915, when the second Pan-American Scientific Congress would also meet in Washington with several learned societies of the United States. Circulars to this effect were sent by the organising committee to all the members, and a great majority agreed.

Dr. C. D. Walcott, secretary of the Smithsonian Institution, presided at the opening meeting, and representatives of thirteen foreign countries and of the London Congress were present and spoke, so that the international character was well maintained, and some joint sessions with the other societies were advantageous to all. The chairman (Dr. W. H. Holmes), the secretary (Dr. A. Hrdlicka), and the other local officials were indefatigable in attention, and the new National Museum proved an ideal meeting place.

According to the rules of the congress, it should meet every two years, "and, if possible, alternately in the Old and New World." Holland had been designated for 1916, but was no longer possible. A warm invitation to Rio de Janeiro, from the six principal Brazilian learned institutions, brought by Dr. A. Simoens da Silva (who represented twenty-six Brazilian societies), was therefore accepted for June, 1918. This had been provisionally settled at the Vienna meeting in 1908, at the request of the Brazilian delegates, but may now have to be postponed. It is to be hoped that anthropologists may have the opportunity to visit Brazil under the pleasant condition of Government patronage. The country must be full of unexplored antiquities, and Dr. Simoens gave an account of the occurrence of nephrite *in situ* at Baetinga, in the province of Bahia. The museums at Rio, Para, and S. Paulo have fine collections.

The Congress of Americanists brings together the workers in the many different fields of Anthropology in the New World, whose explorations add materially to our knowledge of that continent.

A. C. BRETON.

Anthropology.

Elliot Smith.

Primitive Man. G. Elliot Smith, F.R.S. (From the *Proceedings of the British Academy*, Vol. VII.) London: Oxford University Press. Price, 3s. 6d. net. 19

This paper, read before the British Academy in November, 1916, contains a brief account of the fossil forms of man, and of the succession of culture stages in Europe and elsewhere, leading up to what the author describes as "a crude and tentative sketch of the mode of origin and development of ideas that lie at the very root of all human beliefs."

The paper is interesting in manner as well as in matter, both being characteristic of the author. Beginning with a protest against the misuse of the term "prehistoric" and "prehistory," short descriptions of Neandertal man, Pithecanthropus, and Eoanthropus are given, and the author expresses his agreement with those who regard Neandertal man as a separate species, Pithecanthropus as a lowly member of the human family, and Heidelberg man as probably worthy of being placed in a special genus (*Palaanthropus*). He emphasizes the break in continuity marked by the change from the Mousterian to the Aurignacian phrases, and he regards the Aurignacian, the Solutrian, and the Madelainean cultures as indicating successive waves of immigration of representatives of *Homo sapiens*. He adopts the view that the Solutrian methods of stone-working spread to the uttermost parts of the earth, and that the Neolithic methods show the influence of Solutrian technique, exerted before the Neolithic culture found its way into Europe. Some attention is given to the problems presented by the peopling of Australia and America, and the opportunity is taken to protest against the application of the word Caucasian to the Australian aborigines. Professor Elliot Smith takes the view that the idea of domestication of animals spread from one centre, and that it is more probable that totemism arose from domestication, than the reverse. Stress is laid on the significance of agriculture in the impetus it gave to the development of scientific knowledge, to the founding of civilisations, and in its relation to the origin of myths and beliefs.

Professor Elliot Smith's views, which find a summary exposition in the present paper, are too well known to readers of MAN to require any detailed discussion here. It will be agreed that he is doing work of the greatest value to Ethnology in his insistence on the importance of migration and contact in the evolution of culture, but there may be some suspicion that he weakens his case by confronting what he has called a dogma with what sometimes seems perilously like another one. Ethnologists appear to be given the alternative of swallowing the latter, on penalty of being found guilty of harbouring the former. The dilemma is medieval rather than imperative. The evolutionary "school" is not so far removed from the historical as Professor Elliot Smith seems to believe, and if it is apt to show a complacent tendency to assume the occurrence of independent evolution, this does not exclude a readiness to accept adequate proofs of the transmission of arts and customs. It might even be argued that those who assert the tendency to progress to have been so restricted that all similarities—or perhaps it is only nearly all—are due to direct or indirect transmission, are less scientific in their attitude than are those who believe that parallels and coincidences occur. But it is acknowledged that what Professor Elliot Smith sometimes tempts us to regard as a dogma is in reality a method of attack which is destined to have important dynamic effects in Ethnology in the near future; if the pendulum swings too far now it can be trusted to return in due course.

It is no new thing for the enthusiast to stimulate those he antagonises, as well as those who regard him as a prophet, and intolerance of "fashionable doctrines" is the mark of the reformer. For these reasons orthodox ethnologists—and there must be some—will not find it difficult to accept from Professor Elliot Smith what sometimes seems like harsh criticism, and they will at least be in sympathy with his passing reference to "those unconscious phenomena that warp the judgment of all men, however conscientious."

H. S. H.

ANTHROPOLOGICAL NOTES.

ACCESSION TO THE LIBRARY OF THE ROYAL ANTHROPOLOGICAL
INSTITUTE.

20

(Donor indicated in parentheses.)

Hampi Ruins Described and Illustrated. By A. H. Longhurst. 9½ × 6¼. 144 pp. 69 Figs. and Plan. Government Press, Madras. 4s. 6d. (The Superintendent.)

Antiquities of British Honduras.

Dr. T. Gann, of Belize, continues his investigations of the antiquities of British Honduras, and has recently made some very interesting finds in the north of the colony. They go to show that stucco-covered Hotun stones (Hotun is Mr. S. G. Morley's name for the glyph that records the five-year period of the Maya), with devices painted on them supposed to have gone out of use before or soon after the Spanish conquest, were being erected in that neighbourhood, possibly as late as a century, and certainly not more than a century-and-a-half ago. 21

Dr. Gann is contributing a bulletin to the Smithsonian Institution publication, and is also doing some excavation for Mr. G. Heye's Museum of the American Indian at New York.

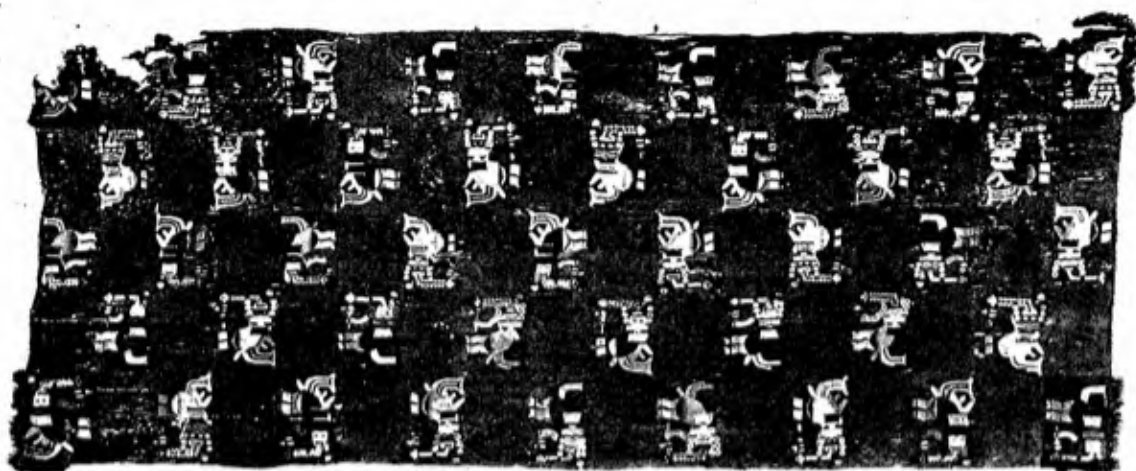


Photo R. Ontario Museum.

FIG. 1.—PRE-INCA TAPESTRY FROM ICA DESERT, SOUTHERN PERU, SIZE 8' 9" BY 3' 6".

RED GROUND WITH A RECTANGLE OF BLACK, AND FRINGED AT EACH CORNER.



Photo R. Ontario Museum.

FIG. 2.—PRE-INCA TAPESTRY FROM ICA DESERT, SOUTHERN PERU, SIZE 8' 8" BY 3' 2".

BLACK GROUND WITH A FRINGED RED RECTANGLE AT EACH CORNER.

ORIGINAL ARTICLES.

Peru.

With Plate C.

Breton.

Peruvian Tapestries at Toronto. By A. C. Breton.

22

The Royal Ontario Museum at Toronto, although only opened in March, 1914, contains a number of unique treasures already. There is the sacred hanging or curtain, from Gondar, taken in the Abyssinian Expedition of 1867, and said to be 800 years old. It has a peculiar design, worked over in silk cord with rich and archaic colours. The director, Mr. C. Currelly, while in Egypt, collected a quantity of palæolithic implements in the Libyan desert, and undertook the making of a reproduction of the great relief of the Punt Expedition in the temple at Deir el Bahri, Thebes. Each stone was moulded separately by a special process with wax and tinfoil, and then coloured from the original by Mr. W. Tyndale and another artist. The result is a perfect facsimile, unattainable by an ordinary cast, where the carving has the extreme delicacy of some of these Egyptian reliefs, and was well worth the cost and trouble. As an example of the highest art it will be most valuable to Canada.

Early Chinese bronzes and small painted clay figures from ancient Chinese graves, beautiful Persian pottery, and a fine Eskimo collection, are conspicuous among many interesting things. Two dark green polished stone axes, although found in China, are said to be distinctly of the New Guinea type, both in form and material.

The remarkably fine Ica tapestries illustrated in the Plate were obtained by Dr. J. Tello during his expedition to Southern Peru

in 1915. He reported sad destruction of the contents of ancient cemeteries there owing to the impossibility of supervision. To Dr. Max Uhle belongs the credit of the discovery of the Ica and Nazca pre-Inca culture, in a land that has long been desert. The specimens of painted pottery brought by him to the Museum at Lima, and others since acquired by the British Museum and the Museum of Natural History in New York, are unsurpassed in perfection of technique.

These two pieces of tapestry appear to have been a pair, being about the same size. They may have formed the skirts of two priestesses, arranged like those of Mexican women, the piece of stuff folded in pleats at the waist and held together by a long woven band, the ends overlapping in front. The width would be suitable for the length of a skirt, the pleats rising above the waist. This supposition seems preferable to the notion that they were shawls.* The one with human figures has a red ground with a black rectangle at each corner. The other has a black ground with red rectangles at the corners.

Mr. Currelly has kindly supplied the following information:—

The four tapestries (two are in Boston, at the Fine Art Museum) were found in a square tomb about twelve feet across and moderately deep. I believe nothing else but the body was in the

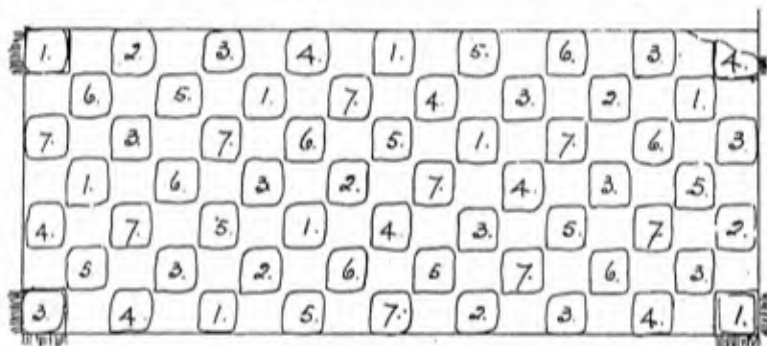
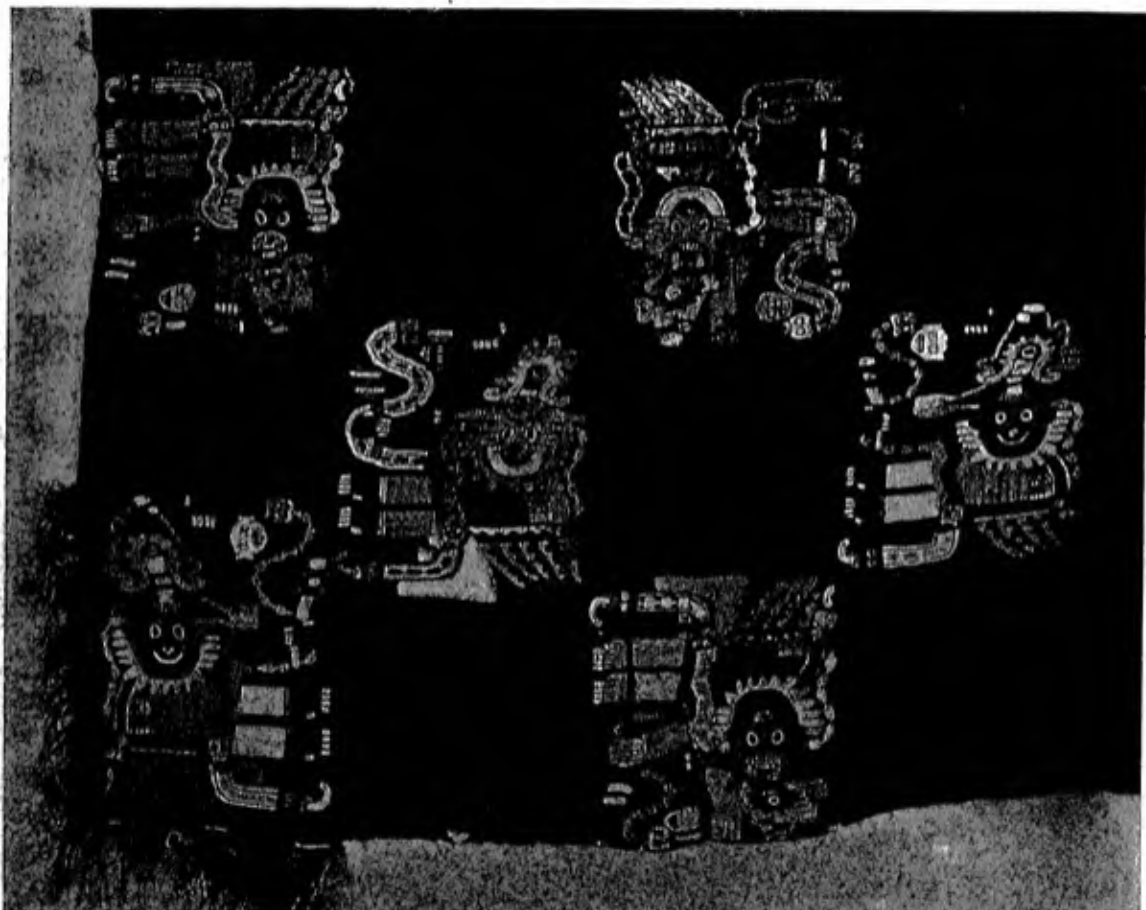


FIG. 3.—DIAGRAM OF COLOUR ARRANGEMENT OF ICA TAPESTRY WITH CONDOR FIGURES.

* The over-garment was usually a kind of poncho with openings for head and arms.

tomb. The tapestries are extraordinarily beautiful in colour. The following colours were used: Two shades of blue, one very pale, the other a kind of periwinkle shade; two shades of yellow, two of brown, olive green, a light pinkish red, crimson red, dark reddish purple, and black. The material would stand very little wear, as the fibre has become short and breaks easily. All the colours were used in different combinations on each figure.

Mr. Currelly has had diagrams made to show the positions of figures in which the main colours are identical. Without any definite sequence, there is an evident intention to have alternate figures alike diagonally, on the piece with the condors, whilst there are also sequences in the horizontal rows. This piece has seven combinations of colours, whilst the other has nine, with further minor differences. Except in a few cases, the head-dresses of the human figures are in two colours,



[Photo by Royal Ontario Museum]

FIG. 4.—DETAILS OF ICA TAPESTRY WITH CONDOR FIGURES OF FIFTH, SIXTH, AND SEVENTH ROWS.

the upstanding feathers the same as the circular side ornaments, and the centres of the latter the same colour as the cross-pieces (conventionalised winged faces?).

In studying the designs it will be found that in each case they begin at the top right-hand corner and proceed in *boustrophedon* fashion, the figures following each other along the rows horizontally, floating downwards until they end with the last figure, turning upwards at the bottom left-hand corner. It is necessary to look at each row so that the heads face downwards, and they must have been worked in that position, turning the material accordingly. In the condor piece the end figures

(left hand) of the first, third, and fifth rows are twisted round towards the next row below. (See Fig. 4.)

The treatment of the sixty crested condor figures is somewhat similar to that of the figures on the Puerta del Sol at Tiahuanaco, but in one hand a human head is held by the hair, in the other is probably a ceremonial dance rattle (Note 1). They have elaborate collars, from which hang the bags of coca as one sees on the mummies, and small snakes twist about them. The forty-three human figures on the other tapestry also hold rattles (usually in the left hand like dancers) and a small head hangs below the other hand. The fish-like fins and tail of these figures could be compared with some in the sculptures and paintings at Chichen Itza, Yucatan, where the feathered serpent changes in convention to fins (Note 2).

The Royal Ontario Museum is at present only one-sixth in size of what is planned. The building cost £70,000, and the maintenance cost £7,000 a year, half contributed by the University of Toronto and half by the Provincial Government. It contains five complete museums, each with a director paid by the University; Economic Geology (so important in Canada, where new minerals are being constantly found), Biology, Palaeontology, Mineralogy, and Archaeology, the last at present the most important. Practically every object in the museum, or the money that obtained it, has been presented, mainly from Toronto, but also with the aid of some extremely generous English friends, often at very high cost. It will become an important factor in the general education of the people of Ontario, the objects being chosen chiefly as examples of art. This is necessary in a recently populated country where the aboriginal culture has been forgotten. The museums at Ottawa and New York are now endeavouring to interest manufacturers and others in the ancient native designs, and to promote their use for various purposes. A. C. BRETON.

NOTES.

NOTE 1.—At Tiahuanaco the condor figures (the middle row) on either side of the central deity look upwards towards him, whilst in the tapestry they are looking down, and are only clear when seen in that position. Many details are not visible in the photograph.

NOTE 2.—Miss Sarah Flint, of the Boston Fine Arts Museum, sent photographs of the Ica tapestries there, bought from Dr. Tello, partly illustrated in the *Museum Bulletin* of October, 1916. The four principal pieces have the same brilliant colouring and are similar in size and arrangement of design to those of Toronto, especially those numbered 16.31 and 16.33, which correspond closely in style. Though no definite account of provenance was preserved, these are probably the other two of the four from one tomb mentioned by Mr. Currelly. Both have five rows of downward-floating figures (forty-eight in 16.31, fifty-three in 16.33), with alternate blank squares forming a sort of check pattern, and arranged so that three rows have the heads downward, whilst the other two rows must be reversed in order to be seen in that position, as intended. Like those described above, the series appear to begin at the upper right-hand corner and to end at the lower left-hand corner. In 16.31 the figures have in one hand what seems to be a spear-thrower, and the other hand holds a human head by the hair. Those of 16.33 have a feathered wing, a bird's tail, hands instead of feet, and carry a rattle and spear-thrower.

A third piece, 16.34, has ten rows of winged human figures, all upstanding, with the same headdresses as Fig. 1, and hold votive heads. The fourth piece has seven rows, with sixty-seven figures of a little man in a poncho holding a long stick and standing upright, the alternate rows (horizontally) being head downwards. Some of the faces (in front view) have the bird design round the eyes like those of the Puerta

del Sol. Allowing for the difference between a much conventionalised sculpture and imaginative feminine needlework, a connection may be traced between the figures of the tapestries and the Puerta del Sol, where the small human figures in the border carry votive heads.

Zululand: Skin-dressing.

Vaughan-Kirby.

Skin Dressing: A Description of the Process of Converting the Raw Hides of Game or Domestic Cattle into Articles of Native Wearing Apparel. By F. Vaughan-Kirby, Game Conservator, Nongoma, Zululand, January 24, 1914. 23

The following description of the Zulu method of skin dressing, by Mr. F. Vaughan-Kirby, was sent me by the Natal Government early in 1914, in answer to my request for information on the subject, through the kindness of Mr. J. R. Boosé, C.M.G., the late Secretary of the Royal Colonial Institute. At some of the informal conferences of Northern Museum Curators there had been



[From a photograph by F. Vaughan-Kirby.

NATIVES USING THE I-ZEMBE.

expressions of opinion on the part of some members that pigmy flints had been used in prehistoric times for the purposes of skin dressing, an opinion which I and others did not hold. As a means of throwing light on the point I tried to get information as to the methods of skin dressing followed by present-day unrisen peoples, and as Livingstone's short account (*Missionary Travels*, London, 1857, p. 193) gave some clue, I endeavoured to follow it up by obtaining more complete information. Mr. Vaughan-Kirby has very evidently taken great pains in collecting the particulars and noting them down, and as a result we have for the first time a very complete description of Zulu soft leather manufacture. The use of the slain animals' brains as an aid in softening the skin is a point of resemblance with the method used by the North American Indians when engaged on a like job, otherwise, except the stretching of the skin, which it would be difficult to encompass in any other way, the methods adopted by

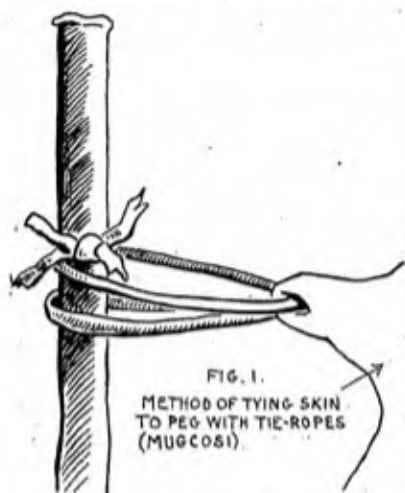
the two peoples are quite distinct. For purposes of comparison I include, among the illustrations, one of the Mokololo tools brought home by Livingstone and now in the British Museum. It does not look likely that the pigmy flints could have served the same purpose as that of the Zulu skin-dressing tools.

H. LING ROTH.

In the present instance—of which the following is a description—the hide selected was that of a three-parts grown "blue" wildebeest (*Connochoetes taurinus*).

The hide was first soaked in fresh water to soften it, the time of immersion being from 10 a.m. on a Sunday morning till 8 a.m. on the Tuesday = 46 hours.

Upon its removal from the water the hide was "pegged out" for the preliminary scraping, with the hair side down. The plan of pegging out is dissimilar to that adopted when it is merely intended to dry the skin. In the latter case holes are cut at intervals round the edge of the hide, into which wooden pegs are inserted and then driven into the ground, the skin being raised about 4 inches from the earth. For the present purpose the holes were cut at intervals round the edge, and into these tie-ropes (made of stripped bark of certain trees, and called *mugosi*) were inserted, by means of which the hide was drawn out tightly to



long, stout wooden pegs driven firmly into the ground, above which the skin was raised about 18 inches (Fig. 1).

The object of the tie-ropes is to enable the hide to be kept tightly stretched; as the skin is pared down and becomes thinner it stretches, and when this occurs the tie-ropes are tightened up.

The hide having been properly pegged out, work was commenced upon the upper side (actually the inside of the skin) with sharp iron instruments known as 'mazembe'. The edge of this instrument (Figs. 2 and 3) is kept very keen and never allowed to dull; a metal pin, 8 inches in length, being used for this purpose (Fig. 4).

To prevent chafing of the hands when using the 'mazembe', the latter is bound round with grass-ropes, soft strips of hide, or any similar substance. The operation of scraping is, in the vernacular, known as *uku pala* (to scrape).

Throughout this operation the skin was kept very damp, water being sprinkled upon it at frequent intervals. The *pala*ing occupied from 9 a.m. till noon, when the skin was removed and returned to the water till 1 p.m., when it was again



FIG. 2. I-ZEMBE. 8 1/2 IN. LONG.

taken out and re-pegged. Scraping was then renewed, but this time other tools were brought into use, and the 'mazembe' laid aside. These are known as 'zi-ndhlcandlwa', and vary considerably in their construction. A specimen of each kind (Figs. 5 and 6)* used on the present occasion was secured by me, and will be found

* Specimens of the instruments as illustrated by Figs. 2, 5, and 6, together with specimens of the skin in process of dressing and finished, are exhibited in Bankfield Museum. For these we have to thank Mr. Vaughan-Kirby.—H. L. R.

in the collection. It is only necessary to say that the one made by driving nails through a rounded block of wood (Fig. 6) is the least satisfactory of the two. Only two kinds of wood lend themselves to the proper construction of the block; viz.,

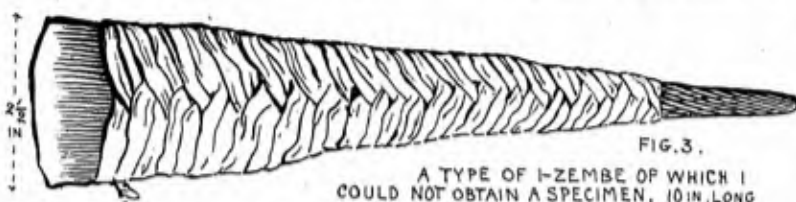


FIG. 3.
A TYPE OF I-ZEMBE OF WHICH I
COULD NOT OBTAIN A SPECIMEN. 10 IN. LONG

that of the 'mGanu tree (from the acid fruit of which a deliciously refreshing but, highly-intoxi-

cating drink is brewed), and of 'mKiwane, the wild fig. These woods shrink upon the metal and hold the nails firmly in position, which no other local wood will do. The specimen procured is of 'mGanu wood. These 'zi-ndhlwandlwa are used upon the surface with a series of criss-cross strokes, that is, in such a manner as to produce (temporary) marks upon the cuticle resembling "cross-hatching" in pencil drawing.

About an hour after these 'zi-ndhlwandlwa were brought into use a distinct nap (Zulu 'mSendo) became visible on the skin, and at once other instruments (as I must call them) were taken up and worked in conjunction with the 'zi-ndhlwandlwa. These simple but highly effective instruments were none other than the broad leaves of the 'mHlaba (a species of aloe or cactus bearing brilliant orange-red flowers, and whose leaves are burnt in the fire, the ash being then finely powdered and used in the preparation of the native *ugwai* or snuff). The individual leaves used for the purpose of raising a

nap on skins is styled *iHlaba*. The leaf is scored slightly down the mid-rib,



FIG. 4.

ROUNDED METAL PIN USED FOR SHARPENING THE 'MAZEMBE. 8 IN. LONG.

then doubled over, tied with a piece of grass-ropes, and the cruel hooked thorns removed from the portion held in the hand. (I have not secured a leaf of this aloe, but will endeavour to do so later on.) The method of using the *iHlaba* is as follows: The leaf is cut about 18 inches in length, and is held in either hand at the base, the pointed end away from the operator and the thorns thus turned towards the point. The instrument is then worked forwards and backwards, the effective stroke being the forward one (away from the operator), as in the draw-back it is slightly raised from the surface of the skin.

It may be mentioned here that in the days prior to the introduction of fencing wire, nails, &c. into the country the entire work of the 'zi-ndhlwandlwa was performed with these 'mHlaba leaves, just as the work of the 'mazembe was performed with iron instruments of native manufacture—now unprocureable.

'Zi-ndhlwandlwa and *iHlaba* were now plied vigorously until 4 p.m., the skin being constantly moistened throughout the whole period, and then it was removed

from the pegs and returned to the river for the night.

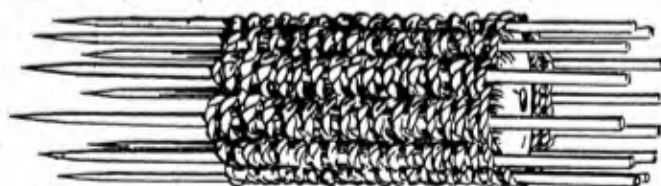


FIG. 5. I-ZIDHLWADHLA. No. 1. 8 IN. LONG

On the following morning work was resumed, the skin being re-pegged. The 'zi-ndhlwandlwa and *iHlaba* were again requisitioned, and for three

hours the work progressed steadily. A critical stage was now entered upon, as the use of the 'zi-ndhlwandlwa had to be discontinued at a certain point, and

a number of tests were made for the purpose of ascertaining if that point had been reached. The principal and simplest test appeared to be running the fingers over the surface of the skin with the hands held as in piano playing, when the touch conveyed the desired information to the operator. Another plan was to feel the surface with four fingers of one hand, and passing the other hand underneath

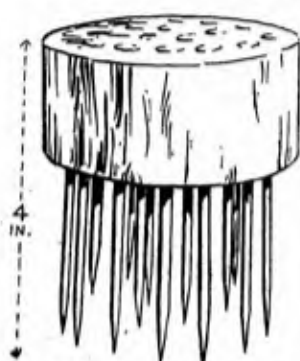


FIG. 6. I-ZIDHLWADHLA No. 2

the skin with the fingers in juxtaposition to those of the other hand, to test the skin between them. A third test was made by running a stout needle into the skin from above, the ease or otherwise with which it entered forming the desired test.

It was considered well to discard the 'zi-ndhlwandlewa, and from this time the *iHlaba* alone were used. Their harsh, powerful thorns very soon raised a nap on the surface, and after two hours more of vigorous work the skin was left an hour. Resuming work at 2 p.m. the scraping process was declared completed at 3.30 p.m.

A quantity of clean water was then thrown over the surface of the skin, and by using the backs of sheath-knives, pieces of plank, etc., it was squeezed almost dry.

The skin then presented the appearance of a white blanket with a close, short nap; upon parting this nap with the fingers the skin below was seen to be greyish-blue in colour, owing to the roots of the hair showing through.

The skin was then treated with the following: 2 lbs. maize meal mixed with cold water to the consistency of thin gruel. This was rubbed lightly over the dressed surface for fifteen minutes, and the whole was left dry. The object attained was the "clearing" of the 'msendo (nap), and getting rid of all tendency to *bunch up*. That night the skin was placed in a native hut, and early next morning again put out to dry. This being accomplished, the skin was once more drawn out of the pegs, but this time with the *hair side uppermost*, and the operators, taking their 'mazembe in hand, proceeded to scrape the hair off completely.

Meanwhile the material for softening the skin (or, as it may now be termed, the 'sidwaba = native woman's petticoat) was being prepared.

Three substances are used for this purpose, viz. :-

1. The kernels of the nuts contained in the very astringent plums known as (*a*) 'matunduluku.* These grow upon a bushy shrub (the *umtunduluku*) found in the bush country (not on the higher and more open hills), and which attains a height of about 15 feet. Specimens are forwarded of these nuts, the kernels of which are of a very oily nature. This substance produces the cleanest results as well as the most odourless; it is usually the most easily obtainable, and therefore most frequently used.

2. The kernels of the nuts of the castor oil plant, *inhlakuva*, which of course is well known. It produces dirty results, and an evil odour and of great permanency, but renders the



FIG. 7.—MAKOLOLO SKIN DRESSING TOOL IN THE BRITISH MUSEUM.

From "Local Prehistoric Implements." By H. P. Kendall and H. Ling Roth. *Bankside Museum Notes*, 1st Series, No. 12, 1912, p. 15.

* The nut has been identified at the Royal Botanic Gardens, Kew, as the fruit of *Ximenia caffra*.—H. L. R.

material extremely soft. It is, I fancy, preferred by the native women who wear the (i)'*sidwaba*, and who are in no way inconvenienced by the offensive smell.

3. The brains of cattle, goats, or wild game. This produces fairly clean results and not *too* offensive an odour after about six months' use, but during that period of probation the garment is about as evil a thing as can well be imagined.

The '*matunduluku* nuts were used on the present occasion. About two pints of the shelled kernels were ground up into a thick paste upon a native grinds'one, this paste being then mixed into about three pints of water "just off the boil," when a thin brownish-coloured gruel, extremely oily and soft to the touch, resulted.

The '*sidwaba* was now placed on the grass (after the dried maize-meal had been shaken off) prepared side up, and the hot liquid poured over it, the latter being thoroughly but lightly rubbed into the nap for ten minutes. This done the '*sidwaba* was rolled up *very* tightly, and green damp leaves of any tree or shrub bound round it, and the whole enclosed tightly in a piece of sacking. Thus it might remain indefinitely, but of *necessity* for only as long as was required to enable the preparation to soak in thoroughly. In the present instance it was removed 48 hours later, when the final operation of *shuka-ing* (rubbing soft) was commenced. This is done exactly in the same way as any ordinary skin is *shuka-ed*, the operator sitting down in the shade, and rubbing and twisting one part of the skin, held in one hand, upon another portion held in the other hand. This work was done at odd times, but when put away was always similarly rolled up, bound in leaves, and enclosed in sacking.

Altogether the *shuka-ing* took about eight hours to complete.

On examining the dressed piece it will probably be seen that the nap is lying pressed down. The garment should be held up between two people, one of whom with a *thin* supple switch strikes the surface sharply at different points, when the nap at once rises. As much of the length of the switch as possible should be permitted to fall upon the surface, not merely a few inches of the point.

It only remains to say that the skins of male animals produce the longest nap or '*msendo*, and those of full grown animals a longer nap than those of younger animals.

F. VAUGHAN-KIRBY.

Papua: Ethnography.

Murray: Ray.

The People and Language between the Fly and Strickland Rivers, Papua. By the Hon. J. W. P. Murray, Lieutenant-Governor of Papua. Communicated, with Notes, by S. H. Ray. **24**

His Excellency the Hon. J. W. P. Murray, Lieutenant-Governor of Papua, has very kindly sent me a vocabulary, collected by himself and the resident magistrate for the Western Division (Mr. S. D. Burrows), during a visit to Lake Murray, a large swampy tract which lies in the angle formed by the junction of the Fly River with the Strickland, in Western Papua, about 7° S. lat. and 141° 30' E. long.

The lake is reached by ascending the Herbert River, a tributary of the Strickland, for about 18 miles. It is a large sheet of water, dotted with innumerable islands. Round the banks and islands a grass is growing which seems to be extending into the lake, and has already covered a large area of it. This is, in parts, strong enough to support a man walking on it. The natives use a paddle with a broad, round, flat blade, which enables them to press down the grass and pass over it in their canoes. The clear water is about 25 miles long, and at the widest about 4 or 5 miles. A depth of 5 fathoms is not uncommon.

Lake Murray was discovered by Messrs. Massy-Baker and Burrows in June

1913. They visited a village on the lake called Mova, but this was found to be deserted when Mr. Murray visited it in April 1914. From Mr. Murray's interesting account in the *Annual Report* for the year 1913-14, I extract and condense the following notice of the people in this region.

Three villages (unnamed*) were visited. The first of these (village A) was about 4 miles inland from the east bank of the Fly River, and about 300 miles from the mouth. The second (village B) was on the west bank of the Fly, about 100 miles further on. These two are called by Mr. Murray the villages of the 1st April and 4th April respectively. The third village was on Lake Murray, about 30 or 40 miles distant from village A.

Natives seen on the banks of the rivers and in the three villages all appeared to be of the same type, and to resemble the natives of the Morehead River and the extreme west more than any others with whom Mr. Murray was acquainted. "They seemed, however, to be very much lighter in colour than the Morehead people, and where the skin could be seen (it was generally plastered with mud or clay) it seemed to be very much fairer than that of our Kiwai police—fairer even than that of the Motu crew." The natives of village B "did not appear to colour themselves at all—a marked contrast to the people lower down." In the other villages the people plastered themselves with clay—red, yellow, brown—and in both of them a man was seen covered from head to foot with white colouring matter.

The hair in all the villages was, "generally speaking, string-dressed in a similar way, plaited into long ringlets, sometimes with cane or bark. Some of the people seen on the Strickland had caps of plaited string or grass," but these were not seen in the villages.

"Near the lake some of the men were shaved on the upper and lower lip, but wore flowing whiskers, with which their beards, divided in the centre, formed part.

"The dress of the people was not elaborate, and consisted almost entirely of a nut. The nut was worn on the *glans penis*, and held in position by strings or threads, which were attached sometimes to a belt, sometimes to the waist of the wearer." Mr. Murray "saw only one man (in village B) wearing a shell, though shells were almost universally worn at village A, and were common on Lake Murray, though on Lake Murray many wore nuts. When the shell is worn, the penis is placed inside it, the back or top of the shell is placed outwards, and the whole is maintained (as in the case of the nut) in a more or less upright position." He saw "no man in this village (i.e., B) who wore anything in the nature of a *rami*† or a grass ornament, or covering at the waist, higher in front or behind." Glimpses of the women seemed to show that they were clothed in what is known as "a fore and aft *rami*"—that is, a *rami* or grass petticoat worn round the waist and covering the back and front, but open at the sides.

At village A, the women "commonly wore a hood and cloak combined, reaching below the knees, and made of bark, whereas at the lake nothing of the kind was noticed."

In the other villages the use of a grass covering for the posteriors (men's), which was often exaggerated by way of ornament into a tail, was more common at Lake Murray than in village A.

All the natives used bows and arrows, with cane gauntlets more substantial

* Mr. Murray distinguishes these by the dates on which he visited them, 1st April and 4th April.

† *Rami* is a general term used by Europeans in Papua for a native petticoat of grass. It is the Motu word *rami*. It has, of course, different names and shapes among different tribes.

than those seen elsewhere. In village B the people were found "wearing cuirasses of rattan—solid pieces of armour, apparently completely arrow-proof, light and serviceable, readily slipped on or off, protecting both front and back, and reaching below the waist. These cuirasses were so fitted to the body as to keep up without shoulder-straps, and to cover all but the upper part of the chest, while leaving free play to the arms. To put them on and take them off the natives slipped them over their feet. They are called, apparently, *Trim*." Mr. Murray notes that only one of these cuirasses has previously been found in (British) Papua (in 1876, by D'Albertis, II, p. 125-6), but they have been found in other parts of New Guinea. They were not known to the people of village A or to those of Lake Murray.

Clubs were seen only at village B; these were made of stone with a curious egg-shaped head, apparently of quartz, with a hole pierced through it lengthwise into which a handle was fitted.

Mr. Murray notes a difference between the big or communal house of village A and that of the lake. "The big house of the former village was simply a large open airy building with wide entrance at each end stacked with all sorts of trophies and valuable objects, *e.g.*, stuffed heads, jaw-bones, and other relics apparently of friends or relations, drums, bows and arrows—whereas the house at a deserted village which we visited on the lake was a much more elaborate structure. The village had only been recently abandoned; it had been raided and some of the defenders killed, and the inhabitants had afterwards returned, buried the dead (or rather their headless trunks, for of course the heads would be carried off by the victors), removed all their property that was left, and built a new village elsewhere. Such at least was the interpretation placed by the police upon the general condition of the place, especially some graves which we found in front and inside the house, each one of which was marked by two arrows which had been stuck in the ground; the arrows had then been split and a stick inserted, the whole making a rough kind of cross.

"The Lake Murray house differed from the other first of all in shape—for it had a high overhanging entrance like the houses in the Purari Delta—and, secondly, in the fact that the front was almost blocked by a wall of sago palm which only allowed entrance by a very low and narrow aperture. Inside there was a barrier of similar material down the centre, and barriers across, and there were also raised platforms—all quite different from the house at the other village."

The houses of village B "were remarkable, and unlike any I have seen elsewhere, for they were built in, or rather round, trees, and yet differed from ordinary tree houses in the fact that they were also supported by piles. The ordinary tree house is built in a tree, in much the same way that an ordinary bird's nest is built in a tree, and is supported by the branches, but in these houses the tree trunk is used as a support, and the branches are not used at all; in fact, in those which I saw, the branches had been lopped off. There were eight of these houses in the village of 4th April (village B), and seven exactly similar had been seen the day before. Of these latter (which were deserted) one, which I particularly examined, was built of five big live trees (one particularly large one), one or two smaller live trees, and about thirty posts; the floor was 42 feet from the ground. A ladder led up into this house; A. C. Gegera ascended it and found in the house some fish and alligator bones, the head of a pig, &c., but no weapons or implements."

"These houses were loopholed. The first two we saw had respectively nine and twelve loopholes symmetrically arranged on the side facing the river, and the others had about the same number."

In the big house at village A heads were found stuffed like those found on the Strickland, and described by D'Albertis (II, pp. 133-4). Mr. Murray notes that D'Albertis was mistaken in regarding the skull as having "been removed by means

of a long cut at the neck." Though the long cut is made at the back and the skin drawn forward over the face, the flesh being removed and replaced with clay or fibre, the skull is not removed; it is there all the time."

"The canoes (of village A and the lake) seem to be the same, and are of the same type as those of village B, but immeasurably superior, as is to be expected, seeing that the inhabitants of the last-mentioned village are probably to be classed primarily as bushmen. The best canoes (made, like all the river canoes I have seen, out of a single tree trunk without outrigger) can hold twenty men; they have a flat protuberance at the end like a platform, upon which a man can stand."

In all the villages the dog was domesticated, but not apparently the pig. "At least no village pigs were seen, though the wild boar was known and boar's tusks used as ornaments."

Tobacco was known and plots were seen at all the villages, and some, at least, on the Fly, knew the small kind of betel called *viorro* by the Motu. "A few sago palms were seen on the Fly, and were probably plentiful, for most houses were built with sago palm, at any rate on the lake, and instruments for the manufacture of sago were among the articles found in some of the shelters on the bank of the Fly." Village B had a good garden, with bananas, taro, and a yam (known in Kiwai as *teui*). Sugar cane was used here, and was seen also at Lake Murray.

The Fly was again ascended by Messrs. H. J. Ryan and S. D. Burrows in May, 1913. Their launch was stranded on one of the upper tributaries above Lario Bank for five months, and when they reached the main river again they were stranded on a sandbank for thirteen days.

Mr. Murray notes in the *Annual Report* for 1914-15: The native population between the Fly and Strickland Rivers appears to be inconsiderable, and those whom the party (Messrs. Ryan and Burrows) met offered no very remarkable peculiarities; but among the numerous visitors who came to see them while they were on the sandbank in the Fly were a party of six, who, if they may be taken as a fair type of their tribe, might possibly be classified as pygmies, or, more probably, as a mixed race descended from pygmies and people of ordinary stature. "On the tenth day," says Mr. Burrows, in his report, "six men came, and from what could be gathered they came from the mountains, and were only on a visit to their friends. These men were remarkably small, but splendidly built. They all measured from 4 ft. 10 in. to 4 ft. 11½ in. in height, and one, the most sturdy, went 37 in. chest measurement."

LANGUAGE.

The vocabulary collected at Lake Murray consists only of fifty-seven words, but short as it is, it proves to be of considerable interest. On looking through it, some words seemed so much like the language of the Merauke tribe (i.e., the people sometimes called Tugeri), that a closer comparison was made with languages at the western end of British Papua, and these comparisons apparently establish a connection between the people of Lake Murray and those further west than the Kiwai, who occupy the delta of the Fly River and the adjacent coast. The vocabulary thus supports Mr. Murray's observation, quoted in the earlier part of this note, that the natives of this region "resembled the Morehead people." If this be so, the tribes connecting the Merauke with the people about Lake Murray may be looked for in the country extending from the Middle Fly River to the upper waters of the Wasi Kussa, Morehead, Bensbach, and Merauke rivers, that is, inland, rather than along the coast. Nothing is known of the languages of the northern part of this region, but there are a few apparent resemblances between words from Lake Murray and

those from the rivers in the south. Mr. Murray's vocabulary of the language at Lake Murray, collected in January 1917, is as follows:—

English.	Lake Murray.	English.	Lake Murray.
Arm - - -	bimbi.	House - - -	koi iba, fa.
Arrow - - -	sangapa, sangava.	Leg - - -	kambag.
Arrow-guard - - -	pusiki.	Lime - - -	agingi.
Bag (for pipe) - - -	ava.	Mouth - - -	tagu.
Banana - - -	napit, napeka	Navel - - -	dukumi.
Belt - - -	gusigusu.	Necklace (beads) - - -	web.
Crossbelt - - -	koia.	Necklace (dog's teeth) - - -	gursaki.
Bird or duck - - -	fiafi.	Nipple - - -	tete.
Bow - - -	faii.	Nose - - -	kisi.
Breast - - -	savi.	Nose-bone - - -	putiaki-kisi.
Breast ornament (mother-of-pearl). - - -	pota.	Paddle - - -	kavia.
Buttock - - -	dumu.	Penis - - -	bo.
Canoe - - -	kagua.	Pipe - - -	mokova.
Cap - - -	guzunda.	Pubic nut - - -	ati kowop
Cicatrix (zig zag) - - -	kuti kuti.	Pubic shell - - -	biva.
Coconut - - -	wongat, boka	Skin - - -	sisik.
Ear - - -	kumbit.	Sugar cane - - -	sekap, simaka.
Ear ornament (of fibre) - - -	galami.	Sun - - -	ka-ia.
Ear-ring - - -	sokozunda.	Teeth - - -	kama.
Earth, soil - - -	mangi.	Testicle - - -	gazi.
Eye - - -	boi.	Thigh - - -	bufu.
Face - - -	kisi (danga).	Tobacco (native) - - -	kagai.
Feather ornament - - -	koma.	Tomahawk (European) - - -	kauba.
Foot - - -	zinda.	Vine (plaited into hair behind) - - -	kizam.
Gourd - - -	gofa.	Water - - -	nia.
Hair of the head - - -	gi.	Whiskers - - -	notu.
Hand - - -	jenla.	One - - -	zenta.
Head - - -	mongo.	Two - - -	singi.
Head ornament (feathers) - - -	kavu.		

In the *Annual Report*, 1913-14, Mr. A. Lyons, speaking of some of the languages between the Wasi Kussa and the Netherlands boundary, says, on the authority of Mr. J. A. W. Coenen, that they "show some resemblance to the language of the Murinda Nim or Tugeri, and a little also to the Jey language of the Upper Merauke River." The Jey words quoted—*damke* (arrow), *bwi* (sago), *mirre* (head), *nampi* (one)—are compared with the words *namp*, *nambi* (arrow), *bi* (sago), *moru* (head), *niambi* and *nambi* (one), used in several languages spoken inland on the Morehead and between the Wasi Kussa and Morehead. None of these, however, appear in the Lake Murray vocabulary, with the doubtful exception of the word for head.

Apparent likenesses between the Lake Murray and Merauke words are the following:—

Arrow: *Sangapa, sangava*. Toro (Bensbach River) *anger*, Merauke *kapan* (a blunt bamboo arrow).

Banana: *Napit*. Merauke *napit*. In Bangu (Morehead River) a banana is *eitha*.

Belt: *Gusigusu*. Merauke *segu*.

Coconut: *Wongat, boka*. Merauke *onggat*. In Bangu *mangar* (coconut), *bak* (point of coconut).

Ear: *Kumbit*. Merauke *kumbit*.

Head: *Mongo*. One authority has Merauke *manth(ke)*, but another has *pa* for "head." Parb (Wasi Kussa R.) *mor* head, Dungenwab *mor-kwod* head, in which *kwod* is "bone."

Head ornament (*feathers*): *Karu*. Merauke *kee put* (ornament of cassowary feathers on the head hanging down behind).

House: *Koi-iba, fa*. Merauke *aha*.

Navel: *Dukumi*. Merauke *dakumē*.

Paddle: *Kavia*. Merauke *kavia*.

Vine plaited in hair: *Kizam*. Merauke *samē* (a long plait of hair hanging down to the middle of the back). *Ki* in the Lake Murray word appears to mean "hair." (*cf.* Vocabulary.

Other similarities with languages between the Wasi Kussa R. and Merauke are :—

Canoe: *Kagua*. Dungenwab *togwa*, Parb *togu*.

Hair of the head: *Gi*. Cf. Dungenwab *jib*, in *mür-jib* (hair), Parb *jeb* in *meri-jib* (hair). *Mör*, *meri* mean "head."

Hand: *Jenda*. Dungenwab *tonda*, Parb *tond*.

Leg: *Kambag*. Bangu *kabokabo* foot, Dungenwab *kéb* (foot), Parb *kab-kabokab* (foot-sole).

Mouth: *Tagu*. Bangu *danka*.

I find no likenesses between the Kiwai of the Fly Delta and the Lake Murray words, but a few resemble those of languages of the Lower Fly and languages between the Fly and Wasi Kussa.

Canoe: *Kagua*. Tagota (Lower Fly) *kwuaa*.

Feather ornament: *Koma*. Dabu (West of Kiwai) *kum*.

Mouth: *Tagu*. Kunini and Masingara (between Dabu and Kiwai) *tage*.

Teeth: *Kama*. Tagota *kam* (teeth), Pisirama (Lower Fly) *kam* (mouth and teeth).

Water: *Nia*. Jibu (between Dabu and Kiwai) *nla*, Kunini *nie*, Bugilai (Mal Kussa River, between Dabu and Wasi Kussa) *ngi*.

Further information from the Lake Murray region will be awaited with interest.

SIDNEY H. RAY.

Ibo: Folk-tales.

Stories (Abstract) from the Awka Neighbourhood (II).

W. Thomas.

Thomas.

By N.

25

7. UGLY GIRL.

The girls said they would dance for *Akpunemendo* (town). All the girls collected and good dancers were picked. One could not go because she was not fine. The others spat on her and blew their noses at her and knocked her on the head with their hands.

She followed them, reached water, and said, "Let me tell you what happened," etc. The water said, "Wash." Then she went on.

She met a woman shaving her daughter's head, and told her. The woman said, "Let me shave your head." Then she went on.

She saw a woman grinding camwood and told her. She got camwood and then went on.

She saw people marking *uli*.* She got *uli* and went on.

She saw a man making cloth. She got cloth for her waist and shoulder and head and went on.

She saw a man making *ákà* beads. She got many and went on.

She saw a man cutting ivory. She got anklets and bracelets and went on.

She came to the dancing place. "Who is that?" they said. "Perhaps that ugly girl."

The women finished the dance. Then the young men picked wives, but all said they wanted the ugly girl. So the others cried and went home.

8. TORTOISE AND ANIMALS.

The tortoise called the animals. He said he would wrestle, and all the animals were to tie on good cloth. "All right," they said. All but the tortoise had cloth. The tortoise went to *ási akuru* and took bark, beat it and put it on.

The tortoise said, "When we wrestle, knock each other down on the stone." "All right," they said. *Nwuku* (like bush cat) and *atani* wrestled and *Nwuku* "knocked" *atani*† on the stone, so that it nearly died.

The tortoise cut off the ear of his own goat [the tortoise had killed the goat and taken the meat to the place].

* *Uli*, black juice for marking the body.

† *Atani*, a kind of mouse; *okwa*, "bread fruit"; *okbaka*, oil bean.

The tortoise danced and gave the ear to Nwuku to eat. All the animals danced, sang, and went home.

The tortoise asked Nwuku for the ear. Nwuku said he had nothing. He offered food and soup. "All right," said the tortoise, and went home. The animals met there. "Why did you give a present to Nwuku and then ask for it back?" they asked.

The tortoise said, "All right; go home; the goat was mine." "All right," said they, and went home.

The tortoise called the animals to sacrifice to Ekwensu (which is the *alose* of tortoise). They collected yams. The tortoise said, "Clean the yams and put them in one pot." The tortoise put one small red yam in. They cooked the yams. Then they took them out and all were changed into red yams, and they gave them to the tortoise. The tortoise ate some and told them to take the yams as a present from him.

On the day of another sacrifice to Ekwensu the tortoise told them to put yams in a pot. The animals said, "No; each have his own pot." Then they cooked them. When the yams were done the animals ate. The tortoise cooked one small red yam and ate it, but it was not enough. He threw the water away secretly in the bush and called the animals to see. "Mwq carried off all the yams of animals" the other day; to-day it has carried off mine." So the animals brought yams for the tortoise; their wives gave *okbaka* and *aku ofele* (tomato leaf), and the tortoise gave the yams to the women as a present.

One day the tortoise said, "Apia will make a feast for us to-day; Apia lives on a tree. I am your father, but I have no wings to fly to Apia." "All right," they said, "we each will give a feather and you will get wings to fly." The tortoise flew; they reached Apia's place. The tortoise said, "To-day I will name my children." He called one Ngniye (look at it), the other Ununine (you all).

Apia cooked food, put it down, and said, "Ngniye." The tortoise said, "That is for my child." Then the tortoise and Ngniye ate. The animals said, "Let us go," and all flew to the iroko tree. They said, "Let each take his own feathers from the tortoise." The tortoise called to his wife to put a heap of sand at the bottom of the iroko. The tortoise fell on the sand and broke. "Now that you kill me, find someone to sew me up." Anum called Orira (grasshopper); it sewed his body. The tortoise said, "I have no money." "Then break me and sew me up," said the grasshopper. "I don't know how to sew," replied the tortoise. The tortoise brought Uli and told Orira he would mark it; it was too white. "All right," he said, and marked it, and the grasshopper became black. "Now you are black I can't pay you for sewing me up," he said. "All right," said the grasshopper.

9. THE TORTOISE AND THE HORNBILL (*Apia*).

The tortoise sent his son to *apia* for fire. The boy got there and saw *apia* roasting nuts; it gave one to the boy and put fire on the sherd. The boy did not know a nut, so he carried it home and gave it to the tortoise. "Let me eat it; I am an old man." The tortoise went and put the fire in the water, and sent the boy to *apia* for fire. "The boy went and played; I never saw him here," said *apia*. "Let me help you eat nuts," said the tortoise. So the tortoise ate three or four at once, *apia* one. "You eat all my nuts," said *apia*. "Where did you get those nuts?" the tortoise asked. "From the middle of the river. Take two big yams, roast them, and put palm oil; put them in a bag, and put this in *mpio*. Then you take it from the other side and hang it on your shoulder. But don't look inside. Then you get many nuts." The tortoise took the fire, said goodbye. He went outside to *mpio*, and went into the bag when *apia* put it there. *Apia*

flew to the river and put nuts in bag. The tortoise cut a hole in the bottom of the bag, and ate yams and all nuts *apia* had put in the bag.

Apia touched the bag, and said, "No nuts; I must look." He saw the tortoise, and put the bag on a tree, filled it, and flew away.

The tortoise took one leaf, made *ógù* (double loop), threw it in the river, and said: "If the river swallows *ógù*, it will swallow me; if not it will not swallow me." It did not sink. The tortoise fell, the fish came, and the tortoise said to them: "Carry me out." So they carried him out. "My hand hurts me," he said. "Dig a hole, and some go inside and some carry me." The fish said they could not all go in, so the tortoise sent to some to collect dry grass. Then the tortoise said: "All go inside." He covered them with grass and set fire, and the fish jumped out, and some were killed. He put them in a pot. Near his own house he met an elephant, and went into the bush. But the elephant saw him, and called after him, "What are you doing?" "I defecate," he said; "wait." The elephant called again, and the tortoise replied, "Wait." Then he took some white pepper, put on dung, and said, "Answer." The elephant called, and the pepper answered. Then the tortoise carried the fish home. The elephant followed. The fish were cooked. The elephant came in, caught the tortoise, and put him under a wood vessel, which he sat on. The elephant ate the fish, and put the bone under the wood vessel, and sat on it. "You eat good fish and put the bone under the vessel," said the tortoise. "What?" said the elephant. "You should eat the bone, and put the good fish for me," replied the tortoise. "Eat," said the elephant. The elephant put all the bones under the vessel. "I eat bones," said the tortoise, "but the fish are mine." "What?" asked the elephant, "only I eat good fish, but you, my father, eat bones."

The elephant took up the vessel. Then the tortoise said: "All right, I'll pay him out."

The tortoise went for a walk, and saw a man carrying *okwa*. He told him to cut it up and give it to the cow. The tortoise went to where the cow was eating, and the cow swallowed him. The boy led the cow to the farm. Then the tortoise spoke: "Cow of *Nwa obelonye*, don't let man or woman eat your meat, but only the tortoise." The boy looked; he watched the cow. Then the tortoise spoke again. Then the boy drove the cow back again, and said it talked. *Nwa obelonye* cried. He beat a bell, called people, and told them. Then he killed the cow and shared the meat. The tortoise came out of the cow's stomach, and said: "Take care, don't put men on my head." "We were just going to call you," they said; "the cow talked." "Whose is it?" he asked. "*Nwa obelonye's*," they replied. "That is forbidden," he said. He said he alone could eat it, and he would carry off the meat. The tortoise began to carry off the meat, and his wife asked what it was. He explained. She sat down. The tortoise watched, and when she got up he said she had been doing what was forbidden. "Don't come near the cow," he said; "if you do, I can't eat." So she went into the room. N. W. THOMAS.

REVIEWS.

Oriental Studies.

Bulletin of the School of Oriental Studies, London Institution. Published by the School of Oriental Studies, London Institution, Finsbury Circus, E.C. 1917. 130 pp. Price 6s. **26**

In an introduction to the first *Bulletin*, the Director, Dr. Denison Ross, gives a summary account of the purposes of the School of Oriental Studies in London. Though the main purpose, as expressed in the Charter of Incorporation, is to provide

instruction in matters relating to the Languages, Literature, and Customs of Eastern and African peoples, specially with regard to practical needs, research is also declared to be one of the objects to be fostered by the school. The supposed difficulties and want of incentive are refuted, and the necessity of a home school for intending travellers or future residents in the Orient is strongly insisted upon.

The Secretary, Dr. P. J. Hartog, gives an account of the origins of the school, and there is a full description of the opening ceremony. The remainder of the *Bulletin* contains samples of work and summaries of lectures delivered in the school. The first section includes three papers on Chinese and two on Indian subjects, with a general paper on Metre and Accent. The second section deals with Malay, Bantu, Hindustani, and Arabic, with a summary of a historical lecture on the connection of Ancient India with the West. A few reviews are included. S. H. R.

Magic: The Mandrake.

Frazer.

Jacob and the Mandrakes. By J. G. Frazer. (From the *Proceedings of the British Academy*, Vol. viii.) London: Humphrey Milford. 27

Sir James Frazer has brought together by far the most exhaustive account, ordered and illuminated by his wide learning and matchless literary gift, of the mandrake superstition and its precise relation to the story in Genesis. It would be interesting to know what he would say of the curiously similar belief of the Pawnees, mentioned in a note to my paragraph on the subject (*Primitive Paternity*, i., 45). E. SIDNEY HARTLAND.

ANTHROPOLOGICAL NOTES.

Anthropology in the United States.

Dr. Ales Hrdlička, of the National Museum at Washington, has examined a large number of the mountaineers of Tennessee. They have many interesting psychological and even physical peculiarities, due to their environment, and in some cases doubtless also to more or less abnormal heredity. 28

Dr. Hrdlička also visited the Shawnee and the Kickapoo of Oklahoma, where there is a rapid disappearance of the full-blood Indian in many tribes. In the two tribes mentioned, numbering collectively nearly 800 individuals, there remain to-day but three full-bloods, all of whom are near or over seventy years of age.

Dr. Hrdlička has been advised from Brazil that, owing to the war, in which Brazil is now to participate actively, the twentieth Congress of Americanists which was to have been held in Rio de Janeiro in June, 1918, has been postponed.

Dr. J. Walter Fewkes, of the Smithsonian Institution, reports new finds of important ruins in Colorado, some of them in the mountains west of Dolores, with several towers, which are numerous in this region. Another cluster of very interesting ruins, hitherto undescribed, he found in a side canyon of Hackberry, not far from Ruin Canyon. There are seven high buildings, one of them 23 feet high, with good masonry. Another has the form of a horseshoe, the highest standing wall being 12 feet. It has resemblances to the Sun Temple previously discovered by Dr. Fewkes.

ANTHROPOLOGICAL MEASURES APPLIED TO AVIATION.

The United States have been divided into twenty districts for the purpose of examining candidates for the aviation corps. Each district is in charge of a professor (with temporary rank of captain in the U.S. Army), usually from the anthropological department of an university. In company with a doctor, he will endeavour to learn all that is possible about the candidates, both mentally and physically, so that it may be known what kind of men are best adapted to aviation. The records of the professor and doctor will be compared with the records of the instructors in aviation.

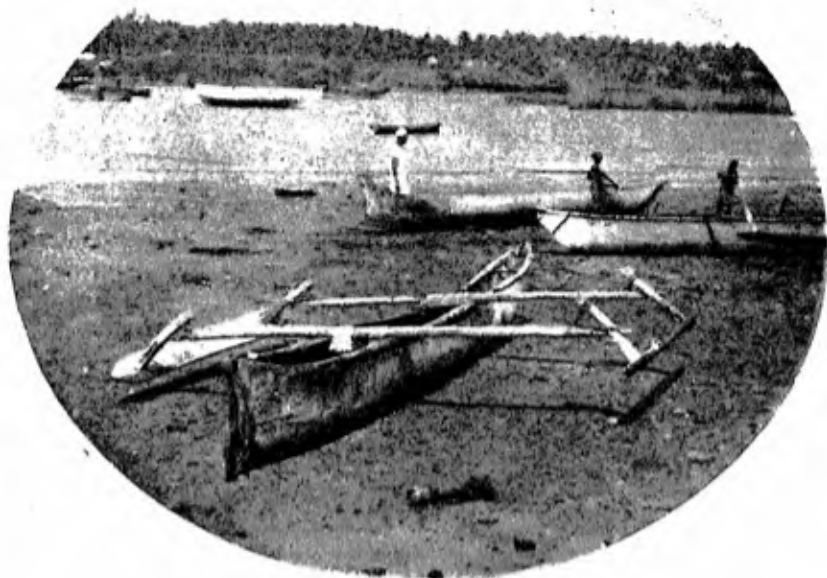


FIG. I.



FIG. II.

GALAWA AT NOMBASA.

Photographed by A. C. Haddon.

THE OUTRIGGER CANOE OF EAST AFRICA.

ORIGINAL ARTICLES.

Africa, East.

With Plate D.

Haddon.

The Outrigger Canoe of East Africa. By A. C. Haddon.

29

Canoes with outriggers are confined to the Indo-Pacific area, and are absent, and so far as we can tell always have been, from the Americas and Europe. Canoes with single outriggers are unknown in Africa, while canoes with double outriggers are restricted to the east coast, from about $4^{\circ} 30'$ to about $5^{\circ} 30'$ S. Lat, i.e., from Lamu to Dar-es-Salaam*; they are also used in the Comoro Islands and the north-west coast of Madagascar. Their occurrence in this region is certainly due to a cultural drift from Indonesia, which probably brought in its train the fish-traps seen in Plate D. Professor F. von Luschan says that the *galawa* is used by the Sswahili fishermen, and previously was only known from inaccurate reports and bad models. . . . Of course it is not indigenous, and as similar boats in the neighbourhood are known only from Madagascar, their origin is to be sought in Indonesia, Madagascar and Angasija being intermediate stations. He gives excellent detailed illustrations drawn by Dr. Weule (Plate XXVII, Figs. 2-2g), which I here reproduce (Fig. 1), but no further description is given. (*Deutschland und seine Kolonien im Jahre, 1896. Berlin, 1897, p. 256.*)

Mr. H. Warington Smyth gives a sketch of one of these craft from Zanzibar, which has the appearance of a wide open boat which is provided with eight seats. All he says about it is: "Arab dug-out '*gharawa*,' 17 feet by 2 feet 6 inches " [6,182 m. by 762 mm.]. Upper strake pegged on, gaily painted to attract "market-women" (*Mast and Sail in Europe and Asia, 1906, p. 315.*)

When I was at Mombasa in September, 1905, I photographed some examples of these canoes (Plate D).

The canoe is shorter and appears to be narrower than those referred to above, also a rudder is present. According to Weule's drawings the flat upper surface of the float is horizontal, whereas it is canted in the Mombasa and Zanzibar canoes; in Weule's and Warington Smyth's drawings each boom passes through and projects slightly beyond a hole in a vertical quadrangular peg, which in its turn passes through the float and projects on its lower surface; the same, more or less, occurs in the Mombasa canoes, but the peg is longer and somewhat narrower and its apex is lashed to the boom by a short slanting cord.

In order to trace the source of this type of canoe it was necessary to obtain the names of the several parts. I therefore naturally applied to Miss Werner and to Mr. C. W. Hobley, C.M.G., to ask if they could supply or obtain this information for me.

The former applied to her friend, Muhammad bin Abubakar (Kijuma), of Lamu, who very kindly sent her the names of the parts and a sketch, which I have had copied (Fig. 2). The booms are called *mirengu*; the peg, *rubi* (in Lamu Ki-Swahili); the float, *parapi*; and the paddle, *kafi*. Miss Werner adds that *parapi* does not strike her as being a Ki-Swahili word, and that at Zanzibar the booms seem to be called *matengo* [but S. H. Ray informs me that the float is called *matengo* in Ki-Swahili]; the outrigger boat is called *galawa* or *ngalawa* everywhere by the Swahili, as distinguished from *mtumbwi*, the ordinary dug-out, and *mashua*, a plank-built boat; mast, *milingote*; sail, *tanga*. Meinhof says *galawa* is from the Portuguese galleão; she thinks it curious that it should mean an outrigger canoe only, as the Anyanja and (?) the Makua use the word for any canoe. She has also heard the booms called *ma'guu* (legs).

* Mr. H. Balfour informs me that he has seen many outrigger canoes at Dar-es-Salaam, but not further down the east coast, though he thinks they may extend to Kilwa (Quiloa).

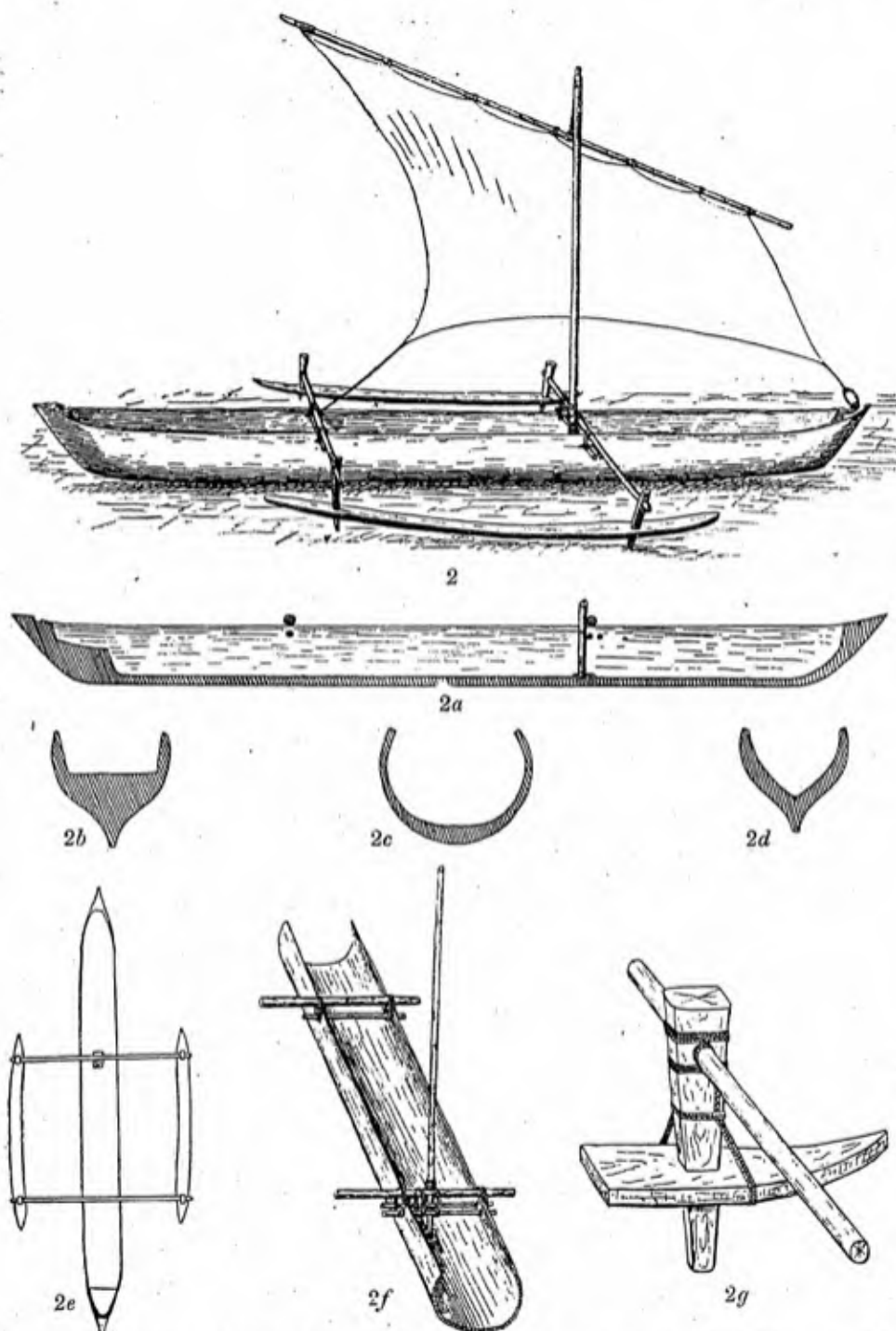


FIG. 1.—(2) Perspective view of a boat with a double outrigger from the "Suaheli" coast; (2a) longitudinal section; (2b, 2c, 2d) transverse sections; (2e) view from above; (2f) oblique view of the central portion of the boat seen from the front; (2g) outrigger attachment (*loc. cit.*, p. 266). Dr. Weule, *del.*, 1896.

INFORMATION COLLECTED AT MALINDI, BRITISH EAST AFRICA, IN JUNE, 1914, BY
MR. H. R. MONTGOMERY, DISTRICT COMMISSIONER, AT THE REQUEST OF
MR. C. W. HOBLEY.

The *nghulaiva*, as used at Malindi, is an outrigger canoe, made in the Comoro Islands and brought here by dhows. It is hollowed out of the trunk of a tree, and is fitted with a wash-strake (*mwati*) along the sides (*mbavu*), and a long triangular fore-wash-strake (*chelêko*) is nailed on to the bow (*oamo*).

The canoe has three seats, one *kipande cha nyuma* at the stern (*tezi*) consists of a rounded stick, 25 mm. (1 inch) in diameter, let into the sides of the canoe, it accommodates the steersman; one (*kirida cha mlingoti*) in the centre of the canoe is an ordinary boat seat with a hole in the middle for the mast; and one (*kipande cha mbele*) in the bows, similar to that in the stern, is used for tying the anchor rope to as well as for a seat. The heel of the mast fits into a "step" or "shoe" (*mstamu ya mlingoti*) nailed to the flat bottom (*utako*) of the canoe. If other seats are required pieces of plank are laid across the canoe.

The sail used in a *nghulawa* is the same, in miniature, as that of a dhow. The mast is made of mangrove (*pau*) wood. When sailing a rudder (*sukani*) is used, but otherwise a paddle (*kafi*) is employed in steering. The rudder is detachable, and is similar to that of an English boat. The tiller is called *kana*, and the iron rings for attaching the rudder to the canoe are called *ramada*.

The outrigger consists of two transverse booms attached to floats. The booms (*mirengo*) are from 1.83 to 2.44 m. (6 to 8 feet) apart, according to the size of the canoe, and are placed much nearer to the stern than to the bows, presumably because it is an advantage in rough weather to have the weight aft and the bow slightly elevated. The booms are attached by ropes to two sticks similar to the *kipande cha nyuma*; they lie across, but are not attached to, the wash-strakes. The float (*parapi*) is from 2.44 to 3.05 m. (8 to 10 feet) long, according to the size of the canoe, and is 305 mm. (12 inches) wide by 76 mm. (3 inches) thick, and is inclined at an angle to the water; it extends about 305 mm. (1 foot) beyond the attachment of the *miguu*, and has pointed ends. The boom is connected with float by a piece of wood (*miguu*, pl. *miguu*), through which it passes, and is made fast by a rope lashing which has no special name, but it is called *kamba ya miguu*. The lower end of the *miguu* passes through the float, and is rendered more secure

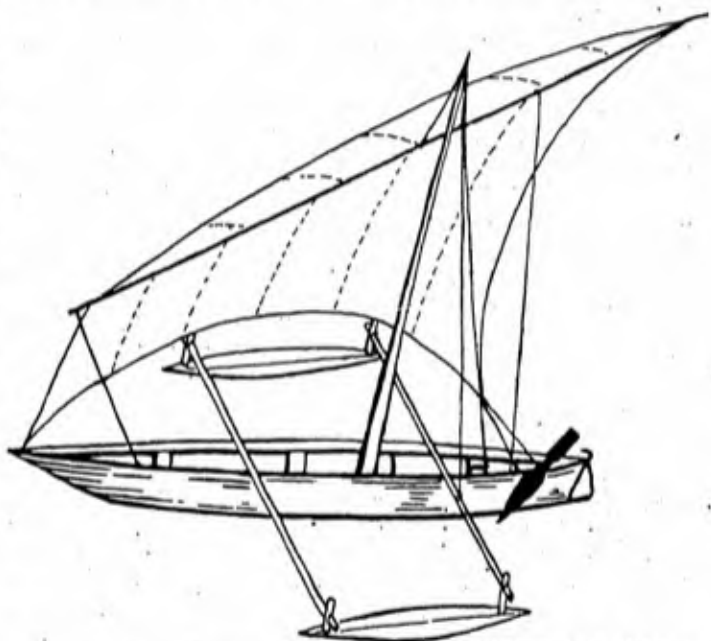


FIG. 2.—SKETCH OF THE GALAWA, OF LAMU.

[By Muhammad Bita Akubakar.]

by two "knees" or L-shaped pieces of wood (*kitaruma cha parapi*) nailed to the *nguu* and the upper surface of the float; this is the general attachment here.

In some cases the sides or bottom of the canoe get cracked or weak, in which case knees (*taruma*), shaped to fit tightly, are nailed on the inside. As the name implies, they are similar to the *kitaruma cha parapi*, only larger in size.

The names given above are the local names, in most cases in Ki-Swahili, but the terms *mirengo*, *parapi*, and *chelêko* are said to have been brought from the Comoro Islands.

There is another canoe (*hori*) in general use, but only for fishing inside the reefs or in calm weather. It is made in the Persian Gulf and brought here by dhows. It is fitted with a wash-strake (*daraba*), but has neither outrigger nor fore-wash-strake. The anchor rope is not tied to the forward seat as in the *nghalawa*, but is attached to a hole (*kharan*) in the bow (*oamo*). The other names for parts of this canoe are: stern, *tezi* or *aigiz* (Arab); gunwale, *naggish*; bottom of canoe, *buttin*; sides, *jumb*; seats, *suka*; knees, *mshaliman*.

In the present circumstances I am unable to deal adequately with the insular canoes of this type, and must content myself with the following notes on the Madagascar canoe, with the hope that our French colleagues will supply us with precise data about the canoes and canoe trade of the Comoro Islands.

Bishop R. K. Kestell-Cornish, in a narrative of a trip to the north-western coast of Madagascar, saw twelve canoes at Fàraráno, on the shores of the bay Béfôtaka, which he thus describes: "One was 26 feet [7.925 m.] in length, and " in breadth only 25 inches [635 mm.]. It was formed of the trunk of one tree, " and a plank on either side was added to give the necessary depth. There was an " ingenious outrigger projecting some 5 feet [1.524 m.] on either side, and on the " lee side bounded by a piece of timber shaped like the bottom of a canoe, which " took the water when she heeled over. . . . These canoes, called *làkam-piàra*, " are commonly worked by two men . . . there is a raised platform for [the " convenience of passengers]. In so frail a structure it would be impossible to step " a mast; they therefore work the sail by means of two sprits, which are stepped " into holes which run along the keel line. If you are going before the wind the " sprits occupy the holes which are nearest together; if close-hauled those which " are further apart . . . We made as much as twelve knots an hour. The " wash came in and wetted us a good deal. . . . At last the breeze freshened, " and in spite of the outrigger, we heeled over a little too much, upon which one " of our men got upon the windward outrigger, on which he managed to squat and " restore the equilibrium." (*The Antananarivo Annual and Madagascar Magazine*, III, 1877, pp. 23, 24.)

The Rev. R. Baron refers to "a *làkam-piàra* or outrigger canoe" at Ambòdimadiro, also on the north-west coast (*ibid.*, XI, 1887, p. 275).

In his notes on the Antankàrana of the extreme northern part of the island the Rev. R. T. Batchelor refers to exceedingly graceful *làkam-piàra*, which average 6.1 m. (20 feet) in length and 61 cm. (2 feet) in greatest width, but he does not mention an outrigger (*ibid.*, III, 1877, p. 29).

Judging from the foregoing description, the *làkam-piàra*, or one form of it, has one float only, a central platform, and the booms which project on the windward side are used as a "weather platform" (A. Lane Fox, *Journ. Anthr. Inst.*, IV, 1875, p. 430).

The Rev. James Sibree (*The Great African Island*, 1880, p. 179) says: "On " the north-west coast again, the outrigger, a nautical feature never seen in Hova " canoes, is largely used for the canoes of the Sàkalàva and Antankàrana, in fact " they could not otherwise live in the rough waters of the broad bays and inlets of

"the coast. Some of these craft are quite different in construction from any Hova canoe, being made of very thin planking, and have a curiously-curved piece rising from the head and stern. It seems possible that some of these canoes have been introduced by the Banyan traders from India; for, if I am not mistaken, some of them much resemble the boat in use at Madras and other Indian ports. Others, however, are probably coeval with these northern Malagasy tribes themselves. One kind of canoe much used among the islands and bays of the northernmost part of Madagascar is called *lâkam-piàra*, the *fiàra* being a raised platform in the centre, intended for people to sit upon, or to place any luggage. One of these is described by Bishop Kestell-Cornish." The other canoes referred to by Dr. Sibree do not concern us here.

Canoes with double outriggers and two booms are characteristic of Indonesia. The attachment of the float to the booms is a matter of some importance (cf. A. C. Haddon, "The Outrigger Canoes of Torres Straits and North Queensland," *Essays and Studies presented to William Ridgeway*, Cambridge, 1913, p. 609). I have not been able to match the East African attachment with that anywhere else. The nearest approach to it is that termed by Friederici the "Halmahera attachment"; this consists of a strait, bent, or forked stick or spar which usually rests upon or is fastened to a longitudinal spar connecting the booms of the outrigger as well as being fastened to the booms themselves. It occurs on the north coast of Ceram, south and west coasts of Buru, the Sula (Xulla) Islands, Celebes, as well as on Halmahera and neighbouring islands. The stick or spar may be vertical or oblique; it is always simply lashed to the float, boom and longitudinal spar, and thus differs from the East African attachment. Thus the type of the outrigger does not carry us very far.

Nor does the linguistic evidence help us very much.

The term *lâkam* (*laka*) (Madagascar) for an outrigger canoe, may reasonably be connected with *hâkâ*, of Ambon (Amboina), which in the West Pacific has the variants *hok*, *aka*, *vâkâs*, *bâkati*, *hâkâs*, *ak*, etc., and as *wangka* and its variants is spread all over Oceania, of which *waga*, *waka*, and *wa* are common in Melanesia. S. H. Ray informs me that the Hova term is *lakana*, the *na* is not radical, and that *laka* is no doubt the Melanesian *waka*, etc., also that Malagasy and Tagal are more closely related than either of them is to the languages of the islands between. He also gives me the following words for the mainland outrigger canoe: Swahili, *galawa*; Yao, *ngalawa*; Makua, *ikalawa*; Nyanya and Nyamwezi, *ngalawa*.

I cannot trace the name for the booms, *mirengo*, etc.

The almost universal term throughout Indonesia and Oceania for the float is *sāmān*, or variants of that word. S. H. Ray wrote to me that "the second canoe of a Fijian double canoe is called *dhamā*, i.e., the outrigger." I, too, found at Mailu, in the south of British New Guinea, that the larger element of the double canoe, *orōū*, is called *tsebi*, and the smaller *larima*, which is the same term that is employed for the float of the single outrigger canoe *vāōna*. I shall not here discuss whether the name for the float of the outrigger was derived from the second element of a double canoe, or the reverse. Other words in Indonesia for the float are *bārā*, of Buli, Halmahera, and *katir*, of Bali, which has a few variants, *katig* (Bisaya), *katih*, etc. The term *parapi* is probably a variant of *bārā*; it cannot be of any of the other terms known to me.*

The word *prahu* (and its variants), for a boat or canoe, occurs all over Indonesia, and as far east as New Britain, where it appears as *parau*. Ray suggests

* The foregoing Indonesian data have been borrowed from G. Friederici, *Mitt aus den Deutschen Schutzgebieten*, Ergänzungsheft, Nr. 5, Berlin, 1912.

to me that *bara* and *parapi* may be the same word, in which case the term for a canoe has been applied to a float.

W. Müller-Wismar says that all Indonesian floats appear to lie obliquely in the water [this also occurs in the Malindi and Zanzibar canoes, but is not indicated in Weule's drawings, nor do I think it is universal in Indonesia], but according to his observations this is never the case among the Melanesian and Micronesian floats, which lie flat on the water. (*Baessler-Archiv*, II, 1912, f.n. 2, p. 244.)

I hoped when I began this enquiry to be able to make a definite suggestion concerning the origin of the East African outrigger canoe; unfortunately, all I have been able to do is to state the problem more precisely, and I must now leave the matter in the hands of those who can adduce further evidence. A. C. HADDON.

Wilts: Archæology.

Kendall.

A Fragment of Blue Stone near Avebury, and its Accompani- ments. By Rev. H. G. O. Kendall, M.A., F.S.A.

30

On November 22nd, 1917, I picked up, on a field at East Farm, Winterbourne Monkton, North Wilts, a fragment of stone, which Dr. Blackmore tells me is "a fine,



" laminated, micaceous sandstone, very similar " to the so-called altar stone at Stonehenge. " This is the first piece of evidence showing " the association of the blue stones at " Stonehenge with Avebury." Like myself, Dr. Blackmore is quite convinced that this stone has been chipped into shape all round its periphery, so as to produce sharp-cutting edges and form a knife. The material, similar to that used by Bronze Age Man in erecting Stonehenge; and the outline, recalling that of a small, broad-bladed bronze dagger; suggest that this implement is of the Bronze Age. The intention of the maker was, apparently, to give the knife a rounded base; but it was broken either in manufacture, or, more likely, on a later occasion.

Dr. Blackmore considers that it may have been brought from Stonehenge as a treasured possession. It is, however, possible that it was taken off an altar stone, or an upright stone, at Avebury, the parent block having been either since destroyed or having yet to be found.

The spot where the fragment was picked up is three-quarters of a mile N.N.E. of Avebury. A few chipped flints of post-

Palæolithic date are to be found there. The majority are lustrous and unchanged in colour, i.e., black or grey. Some, however, are blue. They probably come late in the sequence of surface flints of this neighbourhood. Chipped flints of various periods, from Neolithic downwards, occur, of course, in all this neighbourhood. On this particular spot there are also numerous "Eoliths." Here, too, a shallow open valley debouches on the Kennet, having its origin in acombe on the escarpment where Hackpen Hill ends and Monkton Down is marked on the maps. There is a "river"

of sarsens all down this combe and valley to the eastern boundary of the field in question. They end abruptly here, the reason being that they have been drawn off to make way for the plough. Precisely the same phenomenon may be seen on the ridge itself. The ploughed field on the top of Hackpen Hill, near Glory Ann, which lies just above the head of the combe, was once, according to Rev. A. C. Smith,* the fountain-head of the sarsen stones; but it has been almost entirely denuded to make room for growing crops. It is certain that the constructors of Avebury must have had recourse to this valley in obtaining sarsen stones. Doubtless it was frequented in subsequent ages also. Incidentally, it may be mentioned that some of the stones still remaining in it have certainly been moved and stood up on end.

In MAN, 1905, 64, Prof. Flinders Petrie mentions shelters made of boulders drawn together, near the temple at Serabit-el-Khādem, Sinai, in connection with upright memorial stones there. There are many spots both on the Marlborough Downs, and again on the Cornish moors, and on Dartmoor, where, as it seems to me, large stones have been pulled into position by man, perhaps for the foregoing purpose. This idea is borne out by the fact that flint flakes, &c. sometimes occur underneath the sarsens.

Rev. A. C. Smith records his impression that some of the stones appear to assume "the form of more or less irregular segments of circles, and others of straight and parallel lines." This accords exactly with my own observations made independently.

Dr. Blackmore was good enough to show me a piece of blue stone picked up at Soulges, in Brittany, five years ago.

H. G. O. KENDALL.

Africa, East.

Seligman.

A Linguistic Fragment from Western Kordofan. By Brenda Z. Seligman. 31

The following short vocabulary was obtained from a Pygmy, said to have come from Dar Fertit. He was an old man and had been a slave among the Kababish, in Kordofan, since his childhood, and, as was evident when I tried to push my enquiries further, he had forgotten his native tongue, for when induced to answer simple questions in the language of the vocabulary given below (presumably that of his childhood), he used Arabic constructions. I have submitted this fragment to Mr. S. H. Ray and to Sir Harry Johnston, neither of whom were able to identify the dialect or state its affinities, and it is at the suggestion of the latter that I publish the fragment, in the hope that it may be of use in the future.

I think there can be no doubt that the subject of this note was a genuine Pygmy. He was considerably under 5 feet in stature, showed no traces of any pathological condition, and presented the peculiar gait and merry, restless manner which I had previously noted in an old Pygmy, said to have been a slave of Zobeir Pasha, I met at Kodok, on the White Nile. His chief measurements were as follows:—

H.L., 184; H.B., 136; C.I., 73.9; F.L., 108; Bizyg.B., 132; F.I., 81.8; N.L., 47; N.J., 45; Stature, 1.45m.

His skin colour was dark, but less so than that of his fellow slaves of Dinka origin.

The following simple notation has been adopted to reproduce the sounds occurring in the vocabulary as accurately as possible without adopting the full phonetic alphabet. The consonants are as in English except that the *l* is more liquid; *g* is pronounced as in "gas"; *z* is pronounced as in "zoo."

č represents the *ch* in "child."

ñ represents the nasalized sound of *ng* in "sing."

* *British and Roman Antiquities of North Wiltshire*, p. 128.

ɔ represents the bilabial *v*.

' represents a slight stop like the Arabic *hamza*.

The vowels are as in Italian, - being placed over a long vowel and ~ over a short vowel.

An inverted *e* is used for the short unstressed vowel sound in "father," as *ua* (water).

An inverted *v* is used for the vowel sound in "but," as *ava* (hyena).

' is placed over a stressed syllable.

Boy -	-	-	-	àuma	Water -	-	-	-	ño
Dog -	-	-	-	əná	Woman -	-	-	-	áfúgù
Earth -	-	-	-	évù	One -	-	-	-	ilā
Elephant -	-	-	-	umvòrò	Two -	-	-	-	okári
Gazelle -	-	-	-	ngwómi	Three -	-	-	-	ukòtrò
Giraffe -	-	-	-	indakála	Four -	-	-	-	ekádi
Head -	-	-	-	idruma	Five -	-	-	-	iniglè
Hippopotamus -	-	-	-	onónfò	Six -	-	-	-	isádílè
House -	-	-	-	'lu	Seven -	-	-	-	isárukari
Hyena -	-	-	-	avá	Eight -	-	-	-	isárukutrò
Leopard -	-	-	-	òbù	Nine -	-	-	-	isarikádi
Lion -	-	-	-	čedfáirí	Ten -	-	-	-	enárò
Man -	-	-	-	ámbarúmburú	Eleven -	-	-	-	isadilè ?
Moon -	-	-	-	úmégù	Twelve -	-	-	-	enaro okari
Mountain -	-	-	-	áfi	Twenty -	-	-	-	arésu
Ostrich -	-	-	-	ángù	Twenty-one -	-	-	-	aresu isarila
Pit -	-	-	-	anzù	Twenty-two -	-	-	-	arésu isarikáru
Shelter -	-	-	-	vu	Thirty -	-	-	-	'ávògòlā
Snake -	-	-	-	šába	Many -	-	-	-	šārānzéro
Stars -	-	-	-	'li	One man -	-	-	-	úmogu ilā
Sun -	-	-	-	engúrís	Two men -	-	-	-	uagu okár
	-	-	-	údro					

B. Z. SELIGMAN.

Ibo: Folk-tales.

Thomas.

Stories (Abstract) from the *Awka Neighbourhood* (III). By N. 32
W. Thomas.

10. THE TORTOISE AND ORIMILI (NIGER).

The tortoise went to *orimili* and said they would be friends. "All right," he said, and fixed a day for the tortoise to visit him. He made *abača* for him and his wife, put fish in it, and cooked soup with one leg of a goat.

They ate and went home. The tortoise asked the river to come. He went on the road and defecated, put pepper, &c. to call the river and say the tortoise had gone to his mother's country to beat *odi* (drum).

The river came and the pepper spoke. The river went back. The tortoise sent for the river, and it came. The tortoise cooked *abača* with one round fish, *fufu* and soup with one leg of a goat.

The tortoise said they would go to his mother-in-law to fetch the things he had left. "All right," said the river. The tortoise told the river he would give palm wine to his wife when she came to market and tell her what to do—to kill a goat to her *či*, and to cook a chop for him who killed the goat.

On market day the tortoise dressed well, and his wife did not know him. He gave her palm wine, and she told the tortoise when she came back. He said she had to kill her *či** goat. "All right," she said, and killed it for the *nkwò* market. The tortoise called the river, and they dressed. His wife cooked. The tortoise gave palm wine to his wife twice. She told him to come back, and he told his friend.

* *Či*, a personal tutelary deity.

His wife gave them food, etc. The tortoise carried it all to the river, and they ate it all.

The tortoise took a calabash, and sent it back and saluted his wife.

11. THE GIRL AND THE RIVER.

A girl told her mother to give her cowries to buy *uli* for the feast. "I have no money," said her mother. She begged her father and got the same reply. She went to *mili oiċa* (big river) and went in. Her mother came; people told her her daughter was in the river. She went and called. "No, I can't come out," answered her daughter, "*mili oiċa* has marked me well." Her mother went back. Her father called and got the same reply.

Her friend called and got the same reply. "Go to the market," she said, "and buy a pot and a white fowl, and some chalk and a white yam. Put them all in the pot, throw it in the river, and watch for me." "All right," he answered.

Then she came out and followed her friend.

12. THE TORTOISE AND ČUKU.

The tortoise went to Čuku's house and told him to give him twelve pots of *aċiċa*; "in a year I will give you one person." Near the end of the year the tortoise had nothing and planted *okro*. It grew, and *ene* (cob) ate it. The tortoise asked "Who ate it?" and *ene* replied, "I did." The tortoise said, "I took twelve pots of *aċiċa** from Čuku. I have no money. I planted *okro*, and you ate it. You must pay one person."

The tortoise went out. *Ėne* went back. He saw a root on the road. It knocked his foot. He said, "The tortoise took twelve pots of *aċiċa* from Čuku. He had no money and planted *okro*. I ate it. You knocked my foot; you must pay me one person." *Ėne* went home.

The root looked. It made an ant-heap. A fowl wanted to cross, and ate the ants. The root said, "*Ėne* ate the tortoise's *okro*. I knocked his foot. You ate my ants; you must pay me one person."

The fowl had a chicken. A hawk saw the fowl and tried to take the chicken. The fowl said, "I ate the root's ants. You take my chicken: you must pay me one person."

The hawk flew and found *dingwa* making palm wine. He said, "I caught a chicken; you must pay me one person." "I have nothing," replied the *dingwa*.

The hawk flew; the *dingwa* ran. No one could get a person.

N. W. THOMAS.

Japan: Folklore.

Hildburgh.

Some Japanese Charms connected with Earthquakes. By W. 33

L. Hildburgh.

A certain tumbling toy, a comical image of the Buddhist ascetic Daruma (whose legs dropped off due to their long inaction), is sometimes kept standing in the alcove of a room, in order that the house may be firm against the shocks of earthquakes or of heavy winds [Kyōlo].† A very similar application of small images of this kind is their use by wrestlers, who sometimes carry them as protections against being overthrown [Yokohama].

When an earthquake occurs, a person fearing injury from it should repeat, over and over again, as rapidly as possible, the word "*Manzairaku*," signifying "Ten

* *Aċiċa*, dried yam.

† Place-names given thus identify the localities in which I recorded the respective practices cited.

"thousand years of happiness" [Yokohama]. The term is used between persons as a form of congratulation; whether its employment against the effects of earthquakes is based upon its congratulatory significance, or upon some play on words, or, perhaps, on some set of words formerly used as a charm and whose original form has become altered in the course of time, I do not know.

Should one happen to be in a privy when an earthquake occurs, one should remain there until the earthquake is over, because exceedingly good fortune is thereby presaged; the luck which is to be expected is so exceedingly good that, upon leaving the privy, some small object of iron (a nail is the thing generally used, but anything, excepting a needle,* will serve), should be thrown into the privy, in order that the good luck may not be followed by bad [Yokohama].† The advice to remain in the privy, together with the promise of good fortune as the result of following it, we may, I think, perhaps look upon as the converse of the not uncommon Japanese threatening of penalties, to be produced by supernatural agencies, in attempts to inculcate good manners and seemly behaviour.‡ If this be actually the case, we might well look upon the object thrown into the privy as an offering to the god of the privy,§ in gratitude for the protection afforded during the period of danger from the earthquake, were it not that iron is a metal which, I believe, is frequently regarded in Japan (as it certainly is regarded in Japan's neighbours) as being distasteful to supernatural beings, and that a nail (the object mentioned by my informant as the one most generally used) is a thing often employed for the discomforting of a supernatural being.|| I am inclined to think, therefore, that the action under discussion has not improbably been intended originally as protective, because privies, being notoriously the haunts of evil supernatural beings,¶ a person while in a privy will naturally be peculiarly exposed to evil (and not merely that which may be caused by those evil beings which haunt the privy, but also that from other sources, since the beneficently inclined supernatural beings to whom he normally looks for his protection are likely to regard the evil-odoured and evil-haunted locality with disfavour), and if he has remained there through an earthquake and has escaped uninjured, he may perhaps throw the iron object into the privy as a means for rendering impotent the activities to which, by his exceptionally long stay

* For some notes possibly of help in explaining this exception, see MAN, 1917, 17.

† Ehman, "Volksthümliche Vorstellungen in Japan," in the *Mittheilungen der deutschen Gesellschaft für Natur und Völkerkunde Ostasiens*, Vol. VI, p. 330, says that "If one is in a privy at the time of an earthquake, one may expect good luck."

‡ Some examples of this are given by Ehman, *op. cit.*, pp. 336 *seqq.*; there can be no doubt, however, that he has gone much too far in attempting to nationalize a number of the beliefs he cites in this connection. Some examples may be found, also, in the collection of Japanese superstitions given by J. E. de Becker in *The Nightless City*, 1905.

§ "There is in modern times a God of the privy, who has no particular name, sex, or mythic record." Aston, *Shinto*, p. 167. Compare, also, "The goblin of the latrines must be propitiated on New Year's Eve by one saying *Kambari Niudo otogotsumi* on entering the privy." Joly, "Bakemono," in *Trans. Japan Soc.* (London), Vol. IX, p. 42.

|| Cf. MAN, 1915, 65, pp. 119, 120. A Shinto household shrine, if properly constructed, should be put together without nails (L. Hearn, *Glimpses of Unfamiliar Japan*, 1894, p. 398). Coffin-lids are fastened with wooden pegs, and not with iron nails, as these later rot the wood; iron rings, for ropes, may, however, be put at the bottom of the coffin (M. Titsingh, *Illustrations of Japan*, London, 1822, p. 256).

¶ According to Hirata, a writer on Shinto, "privies, as well as dunghills, and all unclean places, are a favourite resort of evil spirits." Aston, *op. cit.*, p. 168. The belief that "women who sweep it out daily and make an offering to the God of a light on the last day of each month will be free from diseases below the girdle" (*ibid.*, *loc. cit.*), and other beliefs in which the Privy-god (or gods) appear beneficently associated with menstruation, are, I imagine, probably due to a process of the kind which, based on fear, has led to the deification of the evil supernatural beings to whom certain infectious diseases are ascribed.

in the immediate vicinity of the evil beings of the privy, he has become the more especially exposed.*

Putting the matter in another way, we may guess that perhaps the "good luck" promised has been intended merely to cause the person to remain in the privy during the earthquake, while the "bad luck,"† which he must try to avoid, is the supposed natural consequence of his protracted stay there. We may observe that this view would appear to be corroborated by the customary Japanese washing of the hands, after leaving a privy, in a vessel of water kept near the privy for the purpose, because this washing seems to be intended—like the washing of the hands before entering one's home after returning from a funeral—rather as a means for purification from spectral evils than as one for physical cleansing, since the water provided often becomes exceedingly dirty, it being changed in some places only once daily. The custom of setting the vessel of water by a nanten-tree (*Nandina domestica*) [Chikuzen province] would seem to afford further evidence in this direction, because the nanten is a tree to which recourse is had, for many purposes and in various ways, for the dispelling of evil influences, and its presence by the privy is probably intended to serve, I think, the double duty of keeping evil supernatural beings away from the privy and removing evil influences which may have been acquired therein.

But if we assume that—for some reason of which I am not aware—especially good fortune is really thought to be the result of remaining in the privy during an earthquake, and that the promise of it is not intended merely to ensure that a person shall remain there, the fear of evil fortune following upon it may possibly be due to some idea such as that underlying the ill-dressing of Japanese children in order "to prevent the noxious effects of the admiration which, if well-dressed, their beauty might excite,"‡ or that said to underlie the inverting of a part of the design upon one of the pillars of the Yōmei-mon at Nikkō, i.e., lest the otherwise perfection of the building bring misfortune upon the House of Tokugawa.§

A verse "well known even now among the people as an earthquake verse" [I take this to signify that it is used, in like manner to numerous other similar verses for other purposes, as a protection against the effects of earthquakes] is the following: "*Yurugu tomo, yomoya nukeji no Kaname Ishi, Kashimano hamino aran kagiri wa,*" which may be freely rendered as:—

"No monster can move the Kaname Rock,
Though he tug at it never so hard,
For over it stands, resisting the shock,
The Kashima Kami on guard."¶

W. L. HILDBURGH.

* Perhaps a similar idea underlies the belief that to hear a cuckoo for the first time in the year while in a privy is unlucky (Ehman, *op. cit.*, p. 330), for the cuckoo is a bird which is associated with a land of the dead, and when its call is first heard it is perhaps thought to be but newly arrived from that land.

† As examples of the evils which the supernatural beings inhabiting privies are thought to be able to cause, there may be cited, as the threatened consequences of spitting in a privy, ophthalmia (*Shinto*, *loc. cit.*), blindness (de Becker, *op. cit.*, p. 152), and a "rough" mouth (Ehman, *op. cit.*, p. 336).

‡ *Manners and Customs of the Japanese in the Nineteenth Century*. London, 1841, p. 177.

§ E. M. Satow, *Murray's Handbook for Japan*, 1st edition. Yokohama, 1881, p. 412.

¶ J. Hattori, "Destructive Earthquakes in Japan," in *Trans. Asiatic Soc. Japan*, Vol. VI, p. 251. This paper gives (pp. 250, 251) an account of the Japanese belief as to the causes of earthquakes, including the one concerning the great catfish (or, according to early records, earthquake insect) believed to live under Japan, to whose movements earthquakes were ascribed, which, together with the means by which it is kept comparatively quiet, is referred to in the verse above.

Europe: Witchcraft.

Murray.

Child-Sacrifice among European Witches. *By M. A. Murray.*

34

In studying the cult of the witches, plain and irrefragable proof is found that the personage called by Christian writers "the Devil," was considered by the witches themselves to be God incarnate as a man. To this deity they made sacrifices of various kinds, the most important of such sacrifices being that of a child. The child was either a witch's child, or was unbaptised; in other words, it did not belong to the Christian Church. This was an important point, and was the reason why unbaptised children were thought to be in more danger from witches than the baptised. "If there be anie children unbaptised, or not garded with the signe of the crosse, or orizons; then the witches may or doo catch them from their mothers sides in the night, or out of their cradles, or otherwise kill them with their ceremonies."* The same author quotes the following as among the crimes laid to the charge of witches: "They sacrifice their own children to the devil before baptism, holding them up in the air to him, and thrust a needle into their brains"; and "they burn their children when they have sacrificed them."† Boguet says: "Les Matrones & sage femmes ont accoustumé d'offrir à Satan les petits enfans qu'elles reçoivent, & puis les faire mourir avant qu'ils soient baptisez, par le moyē d'une grosse espingle qu'elles leur enfoncent dans le cerueau."‡ Boguet's words imply that this was done at every birth at which a witch officiated; but it is very certain that this could not have been the case. The sacrifice was probably made for some special purpose, for which a new-born child was the appropriate victim.

The most detailed account of these sacrifices is given in the trial of the Paris witches (1679-81), whom Madame de Montespan consulted. The whole ceremony was performed to the end that the love of Louis XIV should return to Madame de Montespan, at that time his discarded mistress; it seems to be a more or less distorted fertility rite, hence its use on this occasion. The Abbé Guibourg was the sacrificing priest, and from other indications he appears to have been the Chief or Master of the witches, who, before a less educated tribunal, would have been called the Devil. Both he and the girl Montvoisin were practically agreed as to the rite; though, from the girl's words, it would appear that the child was already dead, while Guibourg's evidence implies that it was alive. The evidence of both witnesses was given gravely and soberly, and without torture. The Montvoisin girl, who was 18 years old, stated that she had presented "à la messe de Madame de Montespan, par l'ordre de sa mère, un enfant paraissant né avant terme, le mit dans un bassin, Guibourg l'égorgea, versa dans le calice, et consacra le sang avec hostie."§ Guibourg's evidence shows that the sacrifice was so far from being uncommon that the assistants were well used to the work, and did all that was required with the utmost celerity: "Il avait acheté un écu l'enfant qui fut sacrifié à cette messe qui lui fut présenté par une grande fille et ayant tiré du sang de l'enfant qu'il piqua à la gorge avec un canif, il en versa dans le calice, après quoi l'enfant fut retiré et emporté dans un autre lieu dont ensuite on lui rapporta le cœur et les entrailles pour en faire une deuxième [oblation]."

The whole of this ceremony seems to be traditional. Such a custom would account for the continued belief, in early times, of the blood or flesh of a sacrificed child in the most holy of religious rites. The belief is preserved in the accusations

* Reg. Scot: *Discoverie of Witchcraft*. Book III, ch. 1, Ed. 1584.

† *Id. ib.*

‡ Boguet: *Discours des Sorciers*, p. 205, Ed. 1608.

§ Ravaissou: *Archives de la Bastille*. 1679-81, p. 334.

|| *Id. ib.*, p. 355.

brought constantly against the Jews, and it occurs also in Christian legend, notably the Holy Grail: "The bishop took a wafer which was made in the likeness of bread, and at the lifting up there came a figure in the likeness of a child, and the visage was as red and as bright as any fire, and smote himself into that bread, so that they all saw that the bread was formed of a fleshly man. And then he put it into the holy vessel again."* The same idea is expressed with, even more precise and ghastly detail in a legend of Christian Egypt: "When the time of the Mysteries arrived, there appeared to the three of them as it were a child on the table. And when the priest stretched out his hand to break the bread, behold the angel of the Lord came down from heaven with a knife in his hand, and he slew the child and pressed out his blood into the cup; and when the priest broke off from the bread small members, the old man drew nigh that he might partake of the Holy Offering, and a piece of living flesh smeared and dripping with blood was given to him."†

In Scotland it was firmly believed that sacrifices of children took place in all classes of society: "The justices of the peace were seen familiarly conversing with the foul fiend, to whom one in Dumfriesshire actually offered up his firstborn child immediately after birth, stepping out with it in his arms to the staircase, where the devil stood ready, as it was suspected, to receive the innocent victim."‡ In the later witch trials the sacrifice of the child seems to have been made after its death, as in the case of the old Witch of Calder, who was accused of casting a spell on Lord Torphichen's son. She gave her evidence readily, without any suggestion of torture, and acknowledged that she had given her dead child, as Sinclair puts it, "to the devil, not only the soul, but the corpse, without a burying."§

It is possible that the killing of children by poison was one method of sacrifice when the cult was decadent and victims difficult to obtain. Both Reginald Scot, writing in 1584, and Sinistrari d'Ameno in the following century, state that "this must be an infallible rule that everie fortnight, or at the least everie month, each witch must kill one child at the least for hir part."|| It is impossible to believe in any great frequency of this sacrifice, but there is considerable foundation in fact for the statement that children were killed, and it accounts as nothing else can for the cold-blooded murders of children of which the witches were sometimes accused. The accusations seem to have been substantiated on several occasions, the method of sacrifice being by poison.¶

The sacrifice of a child was usually performed as a means of procuring certain magical materials or powers, which were obtained by preparing the sacrificed bodies in several ways. Scot says that the flesh of the child was boiled and consumed by the witches, for two purposes. Of the thicker part of the concoction "they make ointments, whereby they ride in the aire; but the thinner portion they put into flaggons, whereof whosoever drinketh, observing certeine ceremonies, immediatlie becometh a maister or rather a mistresse in that practise and facultie."** The gang of Paris witches confessed that they "distilled" the entrails of the sacrificed

* Malory: *Morte d'Arthur*, Bk. III, ch. 101. See also Evans: *High History of the Holy Grail*, Branch I, Title 6.

† Budge: *Paradise of the Fathers*, II, pp. 159-60.

‡ Sharpe: *Historical Account of Witchcraft in Scotland*, p. 147.

§ Sinclair: *Satan's Invisible World Discovered*, p. 262.

|| Reg. Scot.: *Discoverie of Witchcraft*, Bk. III, ch. 2. Sinistrari d'Ameno: *Demonialty*, p. 27.

¶ See, amongst others, the account of Mary Johnson (Essex, 1645), who was accused of poisoning two children. The symptoms suggest strychnine. Howell: *State Trials*, IV, 644, 846.

** Reg. Scot., *op. cit.*, Bk. III, ch 1.

child after Guibourg had celebrated the mass for Madame de Montespan, the method being probably that described by Scot. A variant occurs in both France and Scotland, and is interesting as throwing light on the reasons for some of the savage rites of the witches: "Pour ne confesser jamais le secret de l'escole, on faict au sabbat vne paste de millet noir, avec de la poudre du foye de quelque enfant non baptisé qu'on faict secher, puis meslant cette poudre avec ladicte paste, elle a cette vertu de taciturnité: si bien que qui en mange ne confesse jamais."* At Forfar, in 1661, Helen Guthrie and four others exhumed the body of an unbaptised infant, which was buried in the churchyard near the south-east door of the church, "and took several pieces thereof, as the feet, hands, a part of the head, and a part of the buttock, and they made a pie thereof that they might eat of it, that by this means they might never make a confession (as they thought) of their witchcrafts."† Here the idea of sympathetic magic is very clear; by eating the flesh of a child who had never spoken articulate words, the witches' own tongues would be unable to articulate.

M. A. MURRAY.

REVIEWS.

Indian Antiquities.

Cousens: Longhurst.

Bijāpūr and its Architectural Remains, with an Historical Outline of the 'Ādil Shāhi Dynasty. By Henry Cousens. 4to. 132 pp., cxviii Plates, 28 Illustrations. Bombay: Government Central Press. 1916. Price 3l. 1s. 6d. 35

Hampi Ruins Described and Illustrated. By A. H. Longhurst. Medium 8vo. 144 pp., 69 Illustrations. Madras: Government Press. 1917. Price, 3 rupees.

These reports, issued by the Archaeological Survey of India, describe the remains of two great cities in southern India.

The region included in the kingdom of Bijāpūr was occupied from an early period by Hindu dynasties, the last of which, that of the Deogiri Yādavas, fell before the assault of the Musalmān Alāu-d-dīn Khilji in A.D. 1294. In the middle of the fifteenth century a new State was founded by a Turkish adventurer, Yūsuf 'Ādil Shāh, who died in 1511. After the short reigns of three worthless princes, 'Alī 'Ādil Shāh reigned from 1557 to 1579. The last notable figure in the family was that of the heroic queen, Chānd Bibi, familiar to readers of the novel of Meadows Taylor. The State fell into decay owing to pressure from the Marāthas and the Mughals, and its independent existence ended with the capture of the city by the Emperor Aurangzeb in 1686. The Marāthas, in their usual fashion, pillaged the city, and stripped the buildings of any wood and metal work which could be removed. The site became covered with jungle, and little was known of it till recent times. In 1885 the headquarters of the British District of Bijāpūr were removed from Kalāḍgi to the ancient capital, and some of the buildings were utilised for public purposes. In this process of conversion much damage was done; but in more recent years a scheme of restoration has been carried out, and Mr. Cousens, who has been for many years engaged on the work, has now completed a survey and compiled this fine monograph. The Bombay Press deserves much credit for the excellence of the typography and illustrations.

All who are interested in Indian art and architecture must consult this volume. When Yūsuf 'Ādil Shāh commenced to build his new city he seems to have found little but a few huts on the site. The mosques, tombs, and palaces built by the reigning family were erected by Musalmān architects, who drew their inspiration from Persia and Mughal India; but they utilised the native workmen and their methods. The type of arch which they are said to have invented was really

* De Lancre: *Tableau*, p. 128.† Kinloch and Baxter: *Reliquia Antiquæ Scotiæ*, p. 121.

borrowed from northern India, but their style was deeply influenced by the environment. They were specially skilled in the use of concrete, and their hanging vaults are still a marvel to the engineers of our day. The most beautiful buildings which survive in spite of ill-treatment and neglect are the Ibrāhīm Ranza, the tomb of Ibrāhīm Shāh II; the Gol Gambaz or "Round Dome," which covers the remains of Muhammad 'Alī Shāh II, the vault of which is rivalled only by that of the Pantheon; the Anand and Asār Mahalls, the latter containing two hairs from the beard of the Prophet; the Mehtar Mahall and the Sūt Manzil. A ghastly record of ancient cruelties is the great baobab tree which was the scene of constant executions. Mr. Cousens gives a good account of the famous old guns at Bijāpur. One piece, known as Malik-i-Maidān, "Monarch of the Field," was cast in 1549; it is 14 feet 4 inches long, the bore at the muzzle 2 feet 4 inches, the weight about 55 tons. The Lānda Qassāb, another howitzer, weighs 47 tons.

Mr. Longhurst in his account of the Hampi ruins describes the site of the great Hindu city of Vijayanagar, "City of Victory," which is also the meaning of the name of Bijāpur. It dates from 1336, and for two-and-a-half centuries its rulers gallantly opposed the southward progress of the Musalmāns. Its last ruler, Rāma Rāja, treated his hereditary enemies with haughty insolence, and this led to his being attacked by a confederacy of the Musalmān Sultāns of southern India, among whom the leading spirit was 'Alī 'Adil Shāh of Bijāpur. The Hindu monarch was defeated at the battle of Tālikota in 1565. He was captured, slain in cold blood, and his capital was sacked and destroyed with a thoroughness which recalls German methods. The Jāmi' Masjid, the great mosque at Bijāpur, was erected from the spoils as a memorial of the victory.

Numbers of images, carvings, and inscriptions, cut in the hard granite of the locality, much more durable than the trap rock of Bijāpur, survive; but the superstructure of most of the buildings was of wood, and now only the massive platforms remain. The most interesting relics are the waterworks which supplied the city.

Mr. Longhurst gives an adequate account of all that is to be seen, but his report is naturally much less interesting than that of Mr. Cousens. He has wasted space in attempting to compile a sort of manual of Hinduism, mostly derived from well-known printed sources. This was foreign to his task as an archaeologist, presents few features of interest, and in some cases the work of previous writers has not been adequately acknowledged.

W. CROOKE.

Africa, West: Linguistics.

Sumner.

A Handbook of the Mende Language. By the Rev. A. T. Sumner, B.A. 36
(Assistant Principal, Albert Academy, Freetown, Sierra Leone, West Africa).
Freetown: Government Printing Office. 1917.

The present work is designed to provide convenient material for the study of one of the most important languages in the Sierra Leone Protectorate. Such a work is necessary for practical purposes, as most of the published material consists of formal grammar and vocabulary beyond the requirements of the beginner. Though similar in purpose, Mr. Sumner's book appears more elementary than that of Migeod. The *Handbook* contains an introductory part dealing with pronunciation and euphonic changes, and forty-three graduated lessons each consisting of models, rules, vocabulary, and exercise. Then follow twenty-three pages of reading lessons, with a Mende-English and English-Mende vocabulary of sixty-three pages.

Mr. Sumner's book is a useful and helpful aid to the acquisition of a sound knowledge of the Mende language.

SIDNEY H. RAY.

India : Archæology.

Yazdani.

Megaliths of the Deccan—A New Feature of them. By Ghulam Yazdani, M.A., Superintendent of Archæology, Hyderabad.

37

We have received the *Journal of the Hyderabad Archæological Society* for 1917, which is quite up to the mark of that for 1916 (noticed in MAN, 1917, 107). As in that predecessor, the article of most interest to the anthropologist is in reference to the megalithic remains of the Deccan, or rather to marks found on the pottery discovered in them. A plate is given containing 131 varieties of these marks; some of which are very complicated, while others are quite simple, and therefore naturally resemble those found in other and far distant places.

An article on "Garla and its Remains," by T. Strinivas, gives (amongst other particulars) an account of what is virtually a megalithic temple, "the walls being double throughout, the inner ones in the shrines and ante-chambers being built of large blocks of stone laid horizontally. . . . The whole structure is erected without mortar, the joints being carefully fitted."

In another article on the foundation and growth of the City of Hyderabad, by P. A. Bhaunani, C.E., mention is made (on the authority of Tavernier) of a stone in the Mecca Masjid in that city "of such prodigious bulk that it was five years before five or six hundred men continually engaged could cut it out of its place; they were also to roll it along upon an engine with wheels, upon which they brought it to the Pagod, and several affirmed to me that there were 1,400 oxen to draw it." This was in the time of the Emperor Aurungzebe. A. L. L.

ANTHROPOLOGICAL NOTE.

In 1915 the University College of Wales, Aberystwyth, became the possessors of the library and life-long collections of the late F. W. Rudler, who was Professor and Dean of the College in the years 1876-80, and subsequently Curator of the Museum of Practical Geology, Jermyn Street, London. (For Obituary and portrait see MAN for March, 1915, p. 33.)

38

His library, consisting of some 2,000 volumes and 4,000 pamphlets, has been tabulated and cross-indexed, and his extensive collection of rocks, fossils, &c., carefully labelled. The mineralogical collection has been made available for teaching and demonstration purposes, while the archæological and other specimens have been added to the College Museum.

The additions thus made to the College collections, further assisted by the foundation of the "F. W. Rudler Geological Research Scholarship," have greatly increased the facilities for research work, particularly in the subject of geology.

Monsieur Jules Benaerts, the eminent Belgian sculptor (of the Royal Academy of Brussels), has executed a life-size medallion of Professor Rudler, which has been framed in oak and placed in the wall of the College quadrangle, and below it a brass tablet (executed by Messrs. G. Maile and Son, of Euston Road, London), bearing the inscription, "In memory of F. W. Rudler, I.S.O., F.G.S., 1840-1915, Professor in this College, 1876-80, and Founder of the College Museum," has been affixed to a polished slab of Welsh marble specially cut for the purpose from the Narberth Quarries, Pembrokeshire.

Professor Rudler's numerous friends, and all concerned in the welfare of the College, will be pleased to know that the collections which he formed with so much ability have thus been made available for the furtherance of those studies in which he was so deeply interested, and to which he devoted the labours of a lifetime.

On behalf of the College,

S. G. RUDLER (One of the Governors).





JOSEPH DENIKER.

ORIGINAL ARTICLES.

Obituary.

With Plate E.

Keith: Haddon.

Dr. Joseph Deniker. By Arthur Keith, M.D., F.R.S., and A. C. Haddon, Sc.D., F.R.S. 39

It is with much regret that we record the death of Dr. Joseph Deniker on March 18th, 1918, in the sixty-seventh year of his age. He was born in Astrakan, Russia, in 1852, studying first in Petrograd and afterwards at the University of Paris, where he was awarded his Doctorate in Science in 1886. In Paris he studied under Broca, M. de Lacaze-Duthiers, Topinard, and other distinguished French anthropologists, and in due time became himself a leader in the Parisian School of Anthropology—the centre of anthropological research. From the beginning to the end of his strenuous life he was a student of Human Races, an Ethnologist, yet it was as an anatomist, by his important contribution to our knowledge of the anthropoid apes, that he first won for himself an international reputation. The authorities of the Natural History Museum in Paris had entrusted him with the examination of two rare specimens—one the foetus of a gorilla at the fifth or sixth month of gestation, and the other a foetal gibbon about full time. These Deniker made the subject of an exhaustive study, the results of which are embodied in his "*Recherches Anatomiques et Embryologiques sur les Singes Anthropoïdes*," which appeared in 1885 (*Arch. Zool. Exper.*, 1885, Series II—III, pp. 265, 8 Plates). His monograph is an example of how such studies should be recorded—clear, exact, and detailed, and yet done with a perspective which will have a permanent value. He found that all the essential characters of the gorilla were already marked in the foetus; the crowd of brutal features, which make the adult animal so unlike man in outward appearance, began to appear with the eruption of the first permanent molar teeth. His research led him to support Huxley's dictum that the structural differences which separate man from the anthropoid apes were not greater than those which separate the anthropoids from monkeys. I may quote here a note I wrote to an "*Introduction to the Study of the Anthropoid Apes*," published originally in *Natural Science* (1896, Vol. IX): "Deniker's is the best work upon the Gorilla." In conjunction with Dr. Boulart he wrote a paper on the laryngeal air sacs of anthropoid apes (*Journ. Anat. et Physiol.*, 1886, Vol. 22, p. 51); his investigations into the age transformation of the gorilla's skull appeared in 1885 (*Bull. Soc. d'Anthrop.*, 1885, p. 703). So far as I know these are all the contributions made to the anatomical side of Anthropology. He was, as I have already said, an Ethnologist, and in this rôle his studies include peoples inhabiting all parts of both the Old and the New World. From 1880 onwards he systematically collected data relating to the physical characters of races and peoples, and by the end of the century was in a position to commence the great task of his life—the classification of Human Races. At an early point of his career he realised that a classification founded on a single character—such as the shape of the cranium—could never give a natural classification of races. All the physical characters of the body—stature, proportion of limb and trunk, pigmentation, hair-texture, anatomical features, &c.—had to be used as a basis.

In 1889 appeared his first essay on classification, but it took him ten years more before his knowledge was ripe enough for publication in book-form. In 1900 appeared in the *Contemporary Scientific Series*, under the editorship of Havelock Ellis, that condensed compendium of ethnology—*The Races of Man*. In that work he came to the conclusion that we must recognise at least twenty-nine racial elements in the world's population. While his investigations included the world's population his attention was centred more directly on the racial elements to be found amongst the peoples of Europe. At the same time as Dr. J. Deniker was collecting data bearing on the ethnology of Europe in Paris, Dr. Wm. Z. Ripley, of Columbia

University, was engaged on a similar task in New York. Dr. Ripley, using head form as his chief guide, came to the conclusion that Europeans were compounded from three racial stocks; Deniker recognised six races, with four subsidiary or sub-races—ten all told. Ripley's classification has the merit of simplicity, but time will show that Deniker's comes nearest the truth. Deniker had the advantage of a training which qualified him to estimate the relative value of anatomical structures as "counters" in classification. No modern student can afford to remain ignorant of Deniker's *Les Races de l'Europe* any more than of Ripley's *The Races of Europe*. Both authors have taken enormous pains to collect all available data and to arrange their collections in an exact and systematic manner. Deniker, in his happy position of chief librarian to the Natural History Museum in Paris, used his opportunities with great success. In 1910 he issued in the *Bulletin de la Société d'Anthropologie*, his collected data bearing on the pigmentation of European peoples. He acted as secretary for France in the compilation of the *Catalogue of Scientific Literature*. His interests were wide and varied—in books as well as in men, in Social Science as much as in Anthropology and Geography. He was Chevalier de la Légion d'Honneur, Doctor of Laws of the University of Aberdeen, he served as president of the Société d'Anthropologie, of the Société de Géographie, of the Association des Bibliothécaires Universitaires, and of the Société pour la propagation des Langues étrangères in France. In 1904 the Royal Anthropological Institute of Great Britain invited him to give the Huxley Memorial Lecture—the highest honour at its disposal. He was elected an Honorary Fellow of our Institute in 1895. Dr. Deniker died at 36, Rue Geoffroy, Saint-Hilaire, Paris, which had long been his home, where he leaves a sorrowing widow and family.

A. KEITH.

I am pleased to have the opportunity of acknowledging my appreciation of the ethnological investigations and publications of my friend Joseph Deniker, whose recent death we all deplore. He was always ready to help others, and I have a pleasant recollection of visiting him in his house in the Jardin des Plantes, which he stated with justifiable pride was the one once occupied by Buffon.

Being chief librarian of the National Museum of Natural History in Paris, Dr. Deniker had an expert knowledge of bibliography and access to a first-class library, so it is not surprising that he had a remarkably wide knowledge of the literature of physical and cultural anthropology, as well as of that of other sciences. He was in daily contact with the professors and staffs of the various departments that cluster around the Jardin des Plantes, and, equally naturally, he made the acquaintance of many serious travellers and field-workers. He thus had exceptional facilities for learning about all the investigations that were being made in the natural sciences, and of these he made full use, as is indicated by the diversity of his publications, of which only a very few can here be alluded to. Further, he investigated natives from many parts of the world who have been exhibited in Paris. These circumstances explain how he has been able to write about the anatomy of the orang-utan, the embryology of anthropoid apes, and give useful papers on the Chukchi, Kalmuk, Giliak, Turki, Tatar, Carib, Fuegian, tribes of Senegal and Dahomy, Hamites, Hottentot, Pygmy, not to mention many other peoples. On account of his general and bibliographical knowledge, he was invited to collaborate with Dr. P. Hyades in the production of the seventh volume—"Anthropologie, Ethnographie" of the *Mission scientifique du Cap Horn*, 1882-83; Paris, 1891. This is acknowledged to be "the most important extant study of Yabgan anthropology . . . and earlier writers may be safely neglected." His painstaking researches on the races and peoples of Europe have been universally recognised as masterly productions, and as a token of the esteem with which he was held in this country, our Institute invited

him to deliver the Huxley Lecture for 1904, and awarded to him the Huxley medal (*Journ. Anthr. Inst.*, XXXIV, p. 181).

His book, *The Races of Man: an Outline of Anthropology and Ethnography* (London: 1900), still remains the best systematic introduction to the science of Man, in which a mass of information is imparted clearly and succinctly; adequate references are given, and there are numerous excellent illustrations. A good example of the breadth and depth of Dr. Deniker's studies will be found in his introduction to *The Gods of Northern Buddhism*, by Alice Getty (Oxford: 1914), which is a most valuable general survey of Buddhism, in which he deals with: Buddha; the teaching, its propagation and modifications; the expansion of Buddhism; the religious community; a short survey of Buddhist art; and convents, temples, and sacred images. Finally, as an example of his bibliographical labours, mention may be made of his *Bibliographie des travaux scientifiques (sciences mathématiques, physiques, et naturelles) publiés par les sociétés savantes de la France depuis l'origine jusqu'en 1888*. I. Ain-Orne (Paris, Imprimerie nationale: 1916). The laborious character of this useful work can be gauged by the fact that it contains 16,194 entries, and doubtless the remaining portion was well in hand.

British Anthropologists offer to their colleagues in a sorely-tryed country, at a moment fateful in history, their heartfelt sympathy on the loss of a diligent and erudite student, whose name will retain a high place in the history of our science.

ALFRED C. HADDON.

Malta: Geology.

The Maltese Cart Ruts. By Captain E. G. Fenton, R.A.M.C.

Fenton,

40

Malta as it exists to-day might be looked upon as having attained almost as high a degree of agricultural development as it is possible for any small state to attain, considering its situation and its present rather unfavourable climatic conditions. I said almost, for, although most of the island is subdivided by stone walls into thousands of little fields which are cultivated throughout like kitchen gardens, yet there are to be seen here and there small barren patches where the original bedrock shows on the surface in its old-time nakedness. In fact, we might say that the Maltese take as much as it is possible to take out of the parts of the island which are under cultivation, and are, as far as their means allow them, slowly reclaiming the uncultivated bare areas.

History relates that some five or six centuries ago a large portion of the surface of Malta was naked and uncultivated, and that for some considerable time after the occupation of the island by the Knights (A.D. 1520), the inhabitants regularly imported thousands of shiploads of earth, and spread it over the ground to make a skin of soil for cultivation. The inhabitants of Malta are by nature very industrious, and the conditions of peace which they have enjoyed since the occupation of the island, first by the Knights and afterwards by the British, have enabled them to bring their little state to a condition of agricultural perfection which, considering all the adverse circumstances of climate, distance from markets, etc., with which they have to contend, might be regarded as model.

For one half of the year, from May to November, practically no rain falls on Malta, and although during the other half year there is a fair average rainfall, yet the desiccating action of the summer so predominates over the winter rains that if it were not for the number of sheltering stone walls which are erected all over the island, and the artificial watering carried on by the natives, Malta would soon be reduced to the semi-barren rock condition which it was in some centuries ago. This condition of affairs is characteristic of many parts of the littoral of the Mediterranean, and it is a curious fact that although there is, as a rule, in most places a fair total

annual rainfall, the conditions found are of arid, dried-up countries. A rainfall of 25 or even 30 inches does not seem to help a country if it all falls in one short season and leaves the land parched for the rest of the year.

The stone walls, then, and the artificial watering, are the preservation of Malta, and these could only be carried out in a country protected from plunder and pillage. Let us now visit some of the barren patches alluded to as existing here and there



FIG. 1.—CART RUTS TO THE NORTH OF DWEIRA, ON THE WAY FROM NAXXAR TO ST. PAUL'S BAY.

over the island, and we shall be surprised to see what seem to be peculiar cart ruts cut in the hard rock. Fig. 1, from a photograph kindly given me by Professor Zammit, shows these ruts. They always, as we see there, run in parallel pairs, and are cut to a depth of anything from a few inches up to 2 feet or more. In this photograph the ruts are seen cut in the coralline crag which covers a great part of the higher levels of Malta. This coralline crag is a fairly hard rock, and the amount of traffic necessary to cut the rocks shown in the illustration must have been considerable, and prolonged for a good period. Professor Zammit informs me that these

ruts are found in abundance all over the island, and I have seen them myself in many places, so we must conclude that at one time there was an extensive amount of carting carried on in Malta. Various writers have mentioned the Maltese cart ruts, and it has been generally assumed that they date from prehistoric times, and might even belong to the Neolithic period, and I may state here that Professor Zammit, who is the greatest living authority on the archæology of Malta, holds the view that they are of Neolithic origin. During the autumn and winter of 1916 I was enabled to visit Malta on various occasions, and once I lived a fortnight on the island. During these visits I made a detailed study as far as I could of the cart ruts, and I will give as concisely as I can the results of my work on them. I found that they often branched and came together again in a way which suggested a modern railway junction. They varied considerably in depth, and passing down the face of a hill I found they zig-zagged, always choosing a moderate gradient.

I also found in this place other pairs of ruts running independently of the first, also passing over the side of the hill and following practically the same direction. These latter were only a few yards from the former, and it would



FIG. 2.—DEEP PREHISTORIC CART RUTS ON THE SELMEIN PLATEAU.

[Photo, T. Zammit]

seem that when one pair of ruts became worn too deep another track was started.

I found that in no place was there any sign of a groove cut by horses' feet between the ruts, but the space between them was rough, hummocky, and showed no signs whatever of wearing.

Now in Patagonia, where I lived for several years, I noticed that on the tracks made on the pampas by bullock carts there was no wearing down between the wheels, as the bullocks walk in the ruts made by the wheels. In the case of Malta, however, no bullock could walk in the ruts, as they are too narrow, too clean cut, and too deep to afford a footing to any animal.

An average rut will be found to be about 3 inches wide at the bottom, and, with the sides sloping apart slightly, will be about 8 or 9 inches wide at the top. From this we are driven to conclude that the motive power which propelled the vehicles which cut the ruts was something other than horses walking between the shafts, or bullocks walking at the side.

And the only power we can think of is human power, in the shape of a number of men drawing waggons. It has been suggested to me that the vehicles which passed over these ruts had runners and not wheels, but as I found that the floor of the ruts is, as a rule, very undulatory, and that the individual undulations are often very short and sharp, I concluded that this suggestion must be negatived. This undulatory condition of the floor of the ruts, coupled with the fact that the ruts are often very deep, and that the space between them is generally very hummocky and rough, led me to believe that the Maltese cart-ruts were cut by vehicles having high, strong wheels. I noticed then that most of the Maltese carts have high wheels, and on one occasion I measured a typical one. I found the diameter of the wheel was 5 ft. 4 in., and the distance from the outside of the tyre of one wheel to the corresponding point on the other was 4 ft. 8 in.

I then went along to one of the cart rut areas and measured some of the ruts, and I found that in a typical place the distance between the points corresponding to the outside of the tyres was 4 ft. 9 in. The inside distance was 4 ft. 4 in. From this it would seem that the ruts were made by vehicles with wheels much the same size as the present-day Maltese carts and with axles the same length. In one place I found a modern track joining an old pair of ruts, and the modern wheels seemed to fit the old tracks perfectly. This fact would lead us to believe that the ruts possess no real antiquity, but were formed on the island a century or so back, before macadamised roads came into use. If, however, the reader were to take the trouble to go over a number of the bare cart rut areas and study these old tracks carefully, I think he would be convinced that, notwithstanding the above-mentioned fact, the ruts have no stamp of modernity.

The patination of the surface, the fact that they are often worn away and obliterated in places, to reappear again a little further along, impress the observer with the fact of their age.

But in addition to these there are other facts even more convincing.

One day down at Marsa Sirocco I noticed a pair of ruts running out into the sea, and I could trace them some distance under the water. This points to some antiquity, as a subsidence of this portion of the island must have occurred since they were formed. I am told by Professor Zammit that they are often seen running into the sea in other parts of the island also; if so, the subsidence must have been general and not local, and consequently argues a greater antiquity still. As far as I could find out, since Valetta harbour first began to be used to the present day there has been no noticeable alteration in the level of the land round about it. But to me, one of the strongest bits of evidence of the great antiquity of these cart ruts is the

fact that in some places where they are found cut in the coralline crag, the surface is so rough, jagged, and hummocky, that no living creatures, human or otherwise, could possibly maintain a footing if dragging a heavy load behind them. And I have found considerable lengths of ruts cut deeply through the roughest of this crag.

Sitting out on the island one evening I came to the conclusion that these roads were in use at a time when Malta was covered with a rich soft soil, for I could not imagine a few centuries ago, when earth in all forms was a very valuable commodity, that the natives would use it simply for roadmaking, especially when you think that such material would have to be renewed every year, as, being constantly broken up by the traffic, it would be blown away by every wind into the sea. Then again, if macadam was used some trace of the broken stones would have remained to the present day, but I have never seen any sign whatever of same. I conclude from this that the Maltese cart ruts were cut by wheeled vehicles in some former time when the climate of this portion of the Mediterranean was moister and more salubrious than it is at present.

It has been stated by Bradley, in his book on *Malta and the Mediterranean Race*, that the cart ruts disappear over the cliffs on the south side of the island and reappear again on the Island of Filfla, 3 miles out to sea. Now this island is only a small rock a hundred yards or so across, and its sides are precipitous all round. The channel between it and the main land is deep, and large steamers can pass between. So if cart ruts disappear over the cliff on the south side and reappear again on Filfla it would be absolute proof of the antiquity of the cart ruts.

I asked Professor Zammit if this were the case, and he told me that although he had visited Filfla on several occasions, he had never seen the ruts on its surface, but as it had been used as a target constantly during the last thirty years by the naval people, most of the original surface had been broken away. I myself walked several miles along the cliffs on the south side of Malta, and although I saw typical ruts in more than one place I never saw any of them actually running over the edge. On many parts of Malta, and to a much greater extent on Gozo, there are abundant megalithic remains belonging to the dolmen period or latter half of the Neolithic. I have endeavoured to find if there was any connection between these remains and the cart ruts, but the evidence seems to prove that there was none. The ruts in no way converge towards the megalithic remains, and in the neighbourhood of the latter the ruts are often scarce. The abundance and size of these megalithic remains, and the magnificent workmanship displayed in the rock-hewn temples, shows that at the close of the Neolithic period Malta must have had a fairly moist climate and was capable of sustaining a fairly large population. Recent geological study has shown that after the ice of the Würm age had retreated there were several minor oscillations of climate, such as the turbarian and forrestian described by Geikie, and it is quite possible that these oscillations extended well into historic times, and even into the Iron Age, for it is impossible to think that the enormous climatic disturbances which took place during the Ice Age could have subsided suddenly without leaving some minor pulsations behind. If so, it is quite possible that between two and three thousand years ago Malta was much moister and a more salubrious country than it is at present.

All over Malta there is evidence of a former higher rainfall, in the shape of deep dried up river valleys, cut often for hundreds of feet in the solid rock. Small streams still run down these valleys when there is heavy rain, but even after the most violent storms the rivers are so insignificant that they are incapable of tearing up the bushes and shrubs which can be seen growing across the bottoms of the valleys from side to side, and we may conclude that there is no perceptible deepening of the river valleys at present.

It is consequently possible that as fluctuation of climate in former times was the rule, that the Neolithic civilisation was brought to a close by a period of desiccation, and that the dawn of our Mediterranean historical period was heralded in by a change to the moist again. This change was productive of "the glory" that was Greece and the grandeur that was Rome," and it has been followed by another period of semi-desiccation, and it is in that period we now live.

If these views are correct they will explain to some extent why the centre of gravity of European civilisation has worked its way north during the last thousand years.

In conclusion, then, we may say that although the Maltese cart ruts do not date from neolithic times, they probably took their origin in the early part of the Iron Age, at a time when the climate of that part of the Mediterranean was moister and more calculated to support a large population on the island than would the present conditions.

A number of people drawing repeatedly a heavy waggon argues one thing to me, and that is slavery, and to have slavery you must have a fairly large population. When the population is small and the people sparsely distributed, you will never find slavery, and a large population indicates favourable conditions for living; among these a genial, moist climate will figure largely, and if historians would study a little more the question of the climate which prevailed in former ages, they would probably find that from that source they would have a considerable amount of light thrown on the beginnings and endings of empires and nations.

The above was written after my return from the Mediterranean in the end of 1916. Since then I have spent nine months in Egypt and further east. When in Egypt I consulted Mr. Quibell, of the Cairo Museum, and Dr. Hane, Director of Geological Survey of Egypt, relative to a possible change of climate during historic times, and they both stated that they have no evidence of any such change since the 1st Dynasty in Egypt, but they do not negative the possibility.

I myself, from reading Egyptian history, thought I could trace evidence of altered climatic conditions of the surrounding countries producing large populations resulting in invasions of Egypt, such as the Hyksos invasion (14th to 17th Dynasty), and subsequent invasions by Libyans. However, on coming home I talked the matter over with Professor Cole, and he advised me to get *The Pulse of Asia*, by Ellsworth Huntington. I did so, and I cannot too strongly urge all students of history and climate to carefully read that excellent book. I need not detail here the evidence he produces to show that the climate of Western and Central Asia has altered many times during known history, suffice it that he believes an alteration to the moist occurred about the sixth and seventh centuries of the Christian era. That period would correspond with the wave of Islamism which started in the Arabian Peninsula, and which is now believed to be the fourth Semitic wave which took origin in the same locality. I may here mention that Leonard W. King in *A History of Babylonia and Assyria*, Vol. II, p. 119, after mentioning that the Semitis originated in some part of the Arabian Peninsula, goes on to state that there were probably four waves of Semitic advance, and seems to think that each was preceded by an alteration to the moist in the climate of Arabia. He concludes as follows: "To such climatic changes, which seem, according to the latest theories, "to occur in regular cycles, we may probably trace the great racial migrations from "Central Arabia, which have given their inhabitants to so many countries of "Western Asia and North Africa." The Hyksos invasion of Egypt, and the great wave of Islamism, he includes in the same, and he would have it that consequently in the seventh century of our era the climate of Arabia once more altered to the moist.

It is quite possible that the Maltese cart ruts date from this latter period. The present Maltese carts are probably of an archæan type; I have seen the same type in Egypt and in Italy, and I have seen similar cart ruts in the streets of Pompeii. Professor Cole has suggested that as Malta stands on a shallow platform it once was a much bigger island than at present, and possibly with a moist climate supported a large population.

Before concluding I will mention that Professor Zammit has suggested that the "ruts" were cut first by men in the rock so as to make a track for the wheels. I cannot agree with this idea, for in many places I saw ruts cut a few inches deep, and then the wheels had shifted and cut another rut parallel to the first and only a few inches away from it, and between the two sets often could be seen a narrow flange of stone standing up. A large lumbering waggon with big wheels would easily shift its course when being dragged along, and cut new ruts alongside of the old. Such a condition is of common occurrence, and in some places two or three parallel ruts can be found, all more or less shallow. With regard to the age of the ruts, I think it will be conceded that if they were cut by large, heavy wheels, 5 to 6 feet in diameter, those wheels must have been shod with iron, and on consulting with an eminent Egyptologist, I find that although small pieces of iron have been found in the remains of the early dynasties, iron was not in common use till 600 B.C. From this it would appear that the Maltese cart ruts date either from Roman times or since then, and I think that the early middle ages is the most likely period.

NOTE.

Huntingdon traces a high fluvial period before the Christian era, falling then to an interfluvial dry period from 400 to 600 A.D., during which the conditions were dryer than the present day. This latter, after 600 A.D., was in turn followed by a moist period, which possibly oscillated to dry again during the centuries 1,000 to 1,200, and again became moist in the later Middle Ages. The interfluvial period, 400 to 600 A.D., would probably be the cause of the Decline and Fall of the Roman Empire, and the consequent drifting of power to the north. The cart ruts were possibly formed during Roman times.

E. G. FENTON.

Africa, Central: Canoes.

Torday.

Outrigger Canoes in the Congo. By E. Torday.

41

Among my notes, the publication of which has been delayed by the war (there are two volumes of them in the printer's hands—in Brussels), there is one referring to outriggers observed in the Congo by Captain Hilton Simpson and myself; Dr. Haddon's paper on "The Outrigger Canoe of East Africa" seems to make it imperative that I should mention it now. In a Baboma village, situated on the Kasai river, two days' navigation above the mouth of the Kwilu, we saw some dug-outs transporting some enormous nets to the fishing ground. The nets were stretched between sticks and carried upright, not unlike sails; to counterbalance their weight the canoes were provided with outriggers on one side; these were not improvised, but specially carved for the purpose. We photographed them, but the plates unfortunately perished on their way to Europe. It is, however, possible that Professor Starr, of Chicago, who visited the same region, may possess photographs of them, but this may depend on the season when he travelled there, as fishing with nets of this kind is not practised all the year round. I was also told by the natives that they manufactured canoes of wickerwork covered with hide, and that Professor Starr was fortunate enough to purchase one of these. I suppose these "canoes" were simply outriggers. The Baboma are frequently mistaken for Basongo Meno, the inhabitants of the other bank of the river.

E. TORDAY.

Art.

Read.

The Registration of Works of Art in Occupied Countries. By **42**
Sir C. Hercules Read.

A note under the above heading appears in the March number of *The Burlington Magazine*, signed by Mr. More Adey. In such a magazine the reference is naturally to ancient or mediæval works of art of European origin, but Mr. Adey's sympathies are wide enough to make an appeal to the readers of MAN, whose interests are mainly anthropological.

Mr. Adey cites first a manifesto issued through the notorious Wolff Bureau, stating that, "Although the Higher German Command did all in its power during the march through Belgium to collect the art treasures of the occupied territories and preserve them from destruction," the German "Kunstwissenschaft" is going yet further and will draw up an inventory of all art treasures in Belgium and photograph them, to promote the study of art. The *Informations Belges* makes a caustic reply to this naive statement of these protectors of Belgian monuments in terms that can well be imagined. There is, however, a most practical side to the matter, as Mr. Adey points out, and we might here, as in other cases, learn from the enemy. His words are quite to the point and may as well be quoted: "There are plenty of both officers and men in Palestine, Mesopotamia, and the less explored frontiers of Egypt, well able to use initial discrimination in registering works of art and to preserve them when found. Nor ought any objects of primitive Negro art which German Kunstforscher have missed, to be overlooked by our troops in the occupied portions—now almost the whole of German Africa. Several of the popular books on the African campaign by those who took part in it show excellent faculties for general observation, and the writers' faculties should be utilised in that direction. Moreover, we already owe much knowledge of Negro art to the independent action of intelligent officials before the war."

Mr. Adey's suggestion is practical and opportune, and there would not only be no serious difficulty in putting it into practice, but I am very sure that a large proportion of both officers and men of our forces now in Africa would welcome so intelligent a diversion from the routine of field or camp life. The only danger that I foresee is lest some disciplinarian in a high place should promptly condemn the scheme as non-military and a waste of time. To avoid this it would be desirable to obtain a fiat from the powers at home, commending it as a means of putting the leisure of the soldiers to an intelligent use. To discover exactly how all this should be attained, in these days of multitudinous Commissions, would probably be difficult, though it should be possible. But that it is worth doing, and is, in fact, akin to a duty, will, I think, hardly be denied.

C. HERCULES READ.

Ibo: Folk-tales.

Thomas.

Stories (Abstract) from the Awka Neighbourhood (IV). By N. **43**
W. Thomas.

13. NKENU AND OKWOLI.

Nkenu* and Okwoli were good friends. Nkenu went to Okwoli's home, and *vice versa*. Okwoli collected fish at the waterside. The wife of Nkenu went to Okwoli's house. Okwoli's wife was cooking soup. She put half the fish in it, and gave it to Nkenu's wife, who wanted fire. Nkenu's wife said her husband was (useless) foolish, he could not catch big fish. Nkenu's wife went back. Nkenu had some small fish, and his wife abused him. He said he would try to catch big fish, and asked Okwoli to go with him. Okwoli called Nkenu to come, and said

* Nkenu, a small bird.

he was to watch on the tree in the middle of the river, and catch any big fish he saw.

Okwoli caught many fish. *Ájà* came. Nkenu flew at it, jumped on its head, and caught its eyes. The fish dived. Okwoli could not see it when he came out. By and by Nkenu and the fish came out. Nkenu called Okwoli. Okwoli carried the fish and Nkenu out. Nkenu's wife came and asked Okwoli where the fish was that her husband had killed. His wife said, "Oh, I don't believe he has killed any big fish, or at any rate not many." Nkenu could not speak for water. His wife cut the fish in two and took half at a time.

When Okwoli was ready to go, Nkenu could not fly, and Okwoli tied him to his back.

Cuku told the animals, "A small bird shall kill small fish, and a big bird big fish."

14. THE OLD WOMAN.

An old woman going to market came to an open space, and met two young men sharpening arrows. They asked where she was going. The young men said, "When you come back wait, or, if we come first, we will wait, and take you home to our place." She found them there and they took her, and cooked good food and soup. "If you know our names," they said, "eat; if not, don't." "I don't know your names," she said, so they said, "Go home." "Lead me to the open space," she replied. "If you don't know the way, sleep here," they said, "night is coming, to-morrow we will lead you." The young men then eat the food.

At daybreak they took a sherd, gave it to the woman and told her to fetch fire; "And then we will cook chop and lead you to the place." She went out and met another old woman. This old woman ate koko yams and yams. She gave the first old woman a head of yams, and she swallowed it at once, then a head of koko yams, and she swallowed that at once. The second old woman gave her heads, saying, "Have you eaten for four days?" "No," the other replied, "I reached an open place," and then she told her the whole story. The second old woman said, "I will tell you. The first young man is called Ebwenefezumba, the second Atusiñwuluče." Then she gave her fire. The first old woman went back. The young men cooked food and soup and said, "If you know our names eat; if not don't." She told them their names. "All right, you can eat," they said. So she ate. Then the young men went out with the *alose* (opú), and asked who told the old woman their names. The second old woman came out, took the *alose* and said, "May the *alose** kill those who keep an old woman without food."

15. NKENU AND THE TORTOISE.

One day Nkenu stole the tortoise's she-goat. The tortoise caught Nkenu and said "I will sell you." Nkenu begged the tortoise, "I will buy myself free," he said. "For how much?" asked the tortoise. "£10," said Nkenu. "No," said the tortoise, "if you give me one of your children I will let you free; if not I will sell you." "I can't," said Nkenu. The tortoise sold Nkenu to the Umu čuku man for £30. Then the tortoise took the property of Nkenu and began to make a title for his people.

The beetle wanted to make *amaññulu*† title, so he called the cock. When it came the beetle cooked yams and added fish and meat. The cock asked who would eat all the food. "To-day I make *amaññulu*," answered the beetle. The cock danced, put his head in the fire and burnt head and comb.

The cock flew away without eating. The tortoise heard and came to steal the

* *Alose*, demigod.

† *Amaññulu*, one of the "titles."

vessel of yams. The beetle saw the tortoise and chased him, but he got into the bush.

The tortoise met the elephant, which trod on its head and spoilt its eyes. The monkey saw the elephant and ran. It wanted to jump over the Ogumagana tree, but the tree said, "Don't jump on me, I shall break." So the monkey went back and tried again, but Ogumagana said, "Don't jump on me, I shall break." So the monkey jumped to escape the elephant. Ogumagana broke and the monkey fell on the bush fowl's eggs and broke them. Then the bush fowl cried, "Look where I hid myself."

16. THE TORTOISE AND THE ANTS.

The tortoise found some ripe palm nuts. He cut down the tree and one nut rolled into the ants' hole. The tortoise said he would follow it. He went to the ants' house and asked for the nut. "A boy ate it," they said. "Give me the boy," said the tortoise. They begged him and promised one goat. He said he must have the boy. The ants went inside the room and brought out *eggede* (drum), beat it, got calabash *fufu* and soup and asked if he would carry *eggede*. "Yes," he replied, and take a chop.

The tortoise washed and ate. He agreed to take *eggede* instead of the boy; if he beat *eggede* it defecated *fufu* and soup. Then he went home.

The tortoise beat a bell and called the animals. They met and the tortoise said they should not eat for twelve days to see who was strong. They were to meet and clear a space in the morning and sit there all day. When the sun was overhead the tortoise told them he had a stranger fowl at home. "Let me go and look at it," he said. He went and beat *eggede* and it defecated *fufu* and soup. The tortoise ate for four days and all the soup and *fufu* of the *eggede* were finished. On the evening of the fifth day the tortoise beat a bell and said they could eat yams, corn, etc., for they would die if they fasted twelve days.

The tortoise went to the palm nut tree. The nuts were unripe and none fell out. The tortoise rolled one into the ants' hole and went in again. The ants offered *eggede*. Then he went home and beat the bell and said the animals were to fast twelve days. They met as before.

The tortoise went home and took some dry palm fibre and *ose ora* (kola pepper) and touched *eggede*. Then he washed, brought water to drink, and sat down. He beat *eggede* and four big *anianri* came out, beat the tortoise and went in again. The *anianri* came out again, beat him, and went in again. This happened a third time. Then the *anianri* went with *eggede* to the ants' hole. One carried *eggede* back to the tortoise's house. The tortoise recovered and wanted to carry *eggede* out, so he lit a fire and burnt it. Then he said, "Perhaps *eggede* can hide in my house." So he burnt the house and never went to the palm nut tree again.

N. W. THOMAS.

REVIEWS.

Africa.

Varia Africana, I.—*Harvard African Studies*. Vol. I. 1917. Edited by
Orie Bates, M.A., F.R.G.S., assisted by F. H. Sterns, Ph.D.

Bates.

44

We welcome the appearance of the new Harvard serial which, under the title of *Varia Africana*, is designed to consist of annual volumes dealing with African anthropology in its widest sense. Archæology is thus included, but with regard to Egyptian material the editors have wisely decided to exclude the higher manifestations of Egypt-civilization while welcoming contributions dealing with the prehistoric period and the less-developed phases of Nile culture, the latter being liberally defined

as embracing "survivals, the arts of life, religion, and language." Needless to say, only original papers are desired, but these may be of any length compatible with their publication in a volume "essentially in the nature of a journal," and may include papers of a non-controversial character dealing with the American Negro.

Varia Africana, I, consists of a dozen papers of varying length, a short selected bibliography of Africana for 1915, and Editorial notes, the whole running to close on 300 pages. The contents include papers on Siwan customs, oral surgery in Egypt during the Old Empire, the palæoliths of the Eastern Desert, the worship of the dead in Africa, the ancient speech of the Canary Islands, Nungu (Nigeria) habits and customs, Benin antiquities in the Peabody Museum, an inscription from Gebel Barkal, Darfur Gourds, the Utendi of Mwana Kupona, Egyptian Saints, and Ancient Egyptian fishing. With such a list it is obviously impossible to discuss each paper, nevertheless some attempt must be made to indicate the most interesting features of some of the more important papers.

The paper on Siwan customs, which begins the volume, is by Dr. Mahmud Mohammad 'abd Allah, formerly medical officer at Siwa, the value of the material being greatly increased by the very full notes provided by the editor. It deals for the most part with the customs associated with the personal and domestic life of the individual, but little space being given to the regulation of public life, while the relatively short account of Sidi Sliman, the patron saint of the Oasis, emphasises the plea for the adequate and systematic study of Egyptian holy men raised by Mr. Blanchard in his paper, "Notes on Egyptian Saints." Dr. Sterns gives a careful account—accompanied by many excellent plates—of a collection of palæoliths, made by Mr. G. W. Murray, of the Egyptian Survey Department, from a number of sites in the neighbourhood of the Kena-Koseir road, two of the sites being within a day's journey of the sea. Dr. Sterns compares Mr. Murray's series with the Haynes collection (in the Peabody Museum) from Luxor and other collections from the Thebaid. He notes the absence of the large hollow scrapers, "spokeshaves" as he calls them (though surely the spokeshave has a straight edge), which are found in the Thebaid, and suggests that these are local forms peculiar to the district. The present writer desires to support this view; in the first place, he has had the opportunity of examining another series collected by Mr. Murray from the same district of the Eastern Desert, and this, too, contains no "spokeshaves." Moreover, he spent a couple of months in 1914 in the Egyptian desert investigating a number of problems raised by the study of Egyptian palæoliths in museums, and found these "spokeshaves" only in the neighbourhood of Thebes. They are, however, getting scarce; never—so it would seem—one of the commonest forms, they have been regarded as specially desirable, and assiduously sought for by the hosts of natives turned loose by collectors to obtain specimens for them.

Dr. Sterns has a further short contribution on the subject of Darfur Gourds. The interest of this note will increase as further collections of gourds are made from known areas in the Sudan; meanwhile it may be noted that the geometric designs on these specimens do not resemble those on a series of gourds collected by the writer of this review in Southern Kordofan.

Mr. John Abercromby contributes a most scholarly study of the ancient speech of the Canary Islands, and concludes that it was a lineal descendant of a western dialect of proto-Libyan. Under the title, "The Utendi of Mwana Kupona," Miss Werner publishes in the original Swahili, with transliteration and translation, a charming poem of the didactic order composed in the first half of last century by a Swahili lady of Lamu, its purpose being the instruction of her daughter, but, as the concluding lines make clear, it is also an exhortation to all women to read and profit by it likewise. Throughout the whole there runs a note of tenderness and wisdom.

"Do this little thing for me—the end is not far off—come and sit beside me—receive instructions more precious than jewels—an ornament of grace to thy head and chains about thy neck—it will profit you for this world and the next—hold fast to religion—behave and speak discreetly—be (like) pleasant food in every house you enter—do not associate with slaves—let your husband be content (with you)—keep faith with him always—look after him . . . like a child who knows not how to speak—do not be slovenly . . . let your house be clean—if a person in want comes to your house . . . do not worry him with questions, but hasten to do what you can for him."

Mr. Blanchard's "Notes on Egyptian Saints" is a paper of high missionary value. It would be well if a copy could be given to every official in Egypt, and it should certainly be reprinted so as to be made accessible to visitors to the country.

Dr. Reisner's short note on an inscription in Greek characters from Gebel Barkal—tentatively dated 300-500 A.D.—is interesting because, although originating from a late pre-Christian cemetery, it is probably of Christian origin, though so far the language in which it is written is undetermined.

The longest paper in the volume is that on Ancient Egyptian Fishing, contributed by Mr. Bates. Although the greater part of the paper describes the technique of capture, its implements and their modes of use, a number of interesting sociological suggestions are made. The author sees a special significance in the fact that so many of the pre-dynastic slate palettes are in fish form, and points out that "the nature of the subjects they depict at once suggests to the comparative ethnologist a direct relation between them and the pursuits of the hunter, the fowler, and the fisher. Primitive man in his search for food frequently tries to establish an impalpable, but in his eyes a very serviceable connection between himself and the object of his quest. One of the methods by which the hunter creates such a relationship is by making a likeness of his intended quarry. Such a likeness, by the doctrine that a simulacrum is actively *en rapport* with that which it represents, bestows on its possessor power over the original—the case is one of the commonplaces of homœopathic or imitative magic." Although fishing amulets which simulate the form of the quarry are usually worn by the fisherman, or are attached to his gear, the pre-dynastic palettes were not so used, but were employed to grind paint: "The power supposed to reside in a palette might, however, very efficaciously be transferred to its proprietor by means of the paint ground upon it." "Persons who go in pursuit of the crocodile," says Pliny, "anoint themselves with its fat." In the same way that the crocodile hunter thus assimilates himself to his quarry by a direct contagion, so the owner of a palette could possess himself of the power in the slate likeness by painting himself with the 'medicine' ground upon it." A further development of this idea leads the author to regard the great royal palettes such as that of Narmer as a device for the preparations of a "victory medicine," in short, a slab for grinding this in the form of body paint.

Turning to another aspect of fishing, Mr. Bates shows that in later times there is evidence that fish was comparatively little eaten by the upper classes, though consumed in large quantities by their inferiors, a condition which, as is pointed out, exists among the Baganda at the present day. It might be added that no decent Zulu will eat fish, though as far as the writer is aware no general explanation of these facts has been given. There may be a good deal in Roscoe's remark to the effect that there is a general antipathy to fish among milk drinkers. There is a most interesting discussion on rafts and *balsa*, in connection with which the reviewer would protest against the figure on page 322, which purports to show a Shilluk on an *ambaj* "canoe," or more properly, "float." Repeated and uncomfortable experience

has convinced him that these floats do not stand high and dry out of the water, on the contrary the "deck"—if the term be permissible—is often awash, and if the Old Kingdom raft, a drawing of which is reproduced in Fig. 137, was really used by two men in the manner shown, it must have been a larger and much more stable craft.

With its pleasant form and important contents, *Varia Africana* cannot fail to attract much of the best work of those concerned with African anthropology, and, the reviewer looks forward eagerly to the future volumes of the series.

C. G. SELIGMAN.

Peru: Art.

Means.

A Survey of Ancient Peruvian Art. By Philip Ainsworth Means.

45

Mr. Means has endeavoured within a small compass to give a classification of pre-Columbian art in Peru and in the areas directly influenced by Peruvian culture. His aim is to distinguish the several successive periods of art in this region, and to give an outline of their characteristic features, and also to throw light upon their inter-relationships. He does not attempt to cover the whole field of Peruvian art, his principal material being derived from the products of ceramic and textile art though some attention is given to stone technique. Within the limits which he has imposed upon his range, he has produced a very readable and useful manual, and his account of the various schools of art, their order in time, and their influence upon one another, is a reasoned and suggestive one. The ordered classification of ancient Peruvian finds is yet in its infancy, and much fresh evidence must be collected in a strictly scientific manner before a systematic grouping of art styles in Peru can with confidence be accepted, and the full interest of the numberless specimens preserved in museums can be brought out. The existing uncertainties are fully admitted by Mr. Means, whose treatment of the subject is admittedly tentative. His essay is very suggestive and should be effective in stimulating further researches in the field, conducted in accordance with modern methods.

Mr. Means supports the view, now widely held, that the early culture in Peru and the more archaic types in art, were derived from Central America by culture migration. It is to be noted that he makes no reference to possible old-world influences disseminated by enterprising Phœnician explorers, whose activities have recently been so strenuously and assertively advertised.

The chronological sequence of culture periods which he gives is as follows: (1) Proto-Chimu, (2) Proto-Nasca, (3) Tiahuanaco I, (4) Tiahuanaco II, (5) Epigonal and Red-white-black, (6) Chimu and Nasca, (6) Colla-Chulpa, (8) Early Inca, (9) Late Inca. Of these divisions the first three appear to have been more or less contemporary, though Mr. Means gives reasons for believing that the realistic Proto-Chimu art antedated the more conventional and richly-coloured Proto-Nascan art. The Tiahuanaco I culture, he points out, is very distinct from the two former, and may have been derived from an Arawakan source, but the material available for diagnosis is limited and is mainly derived from stone-work, pottery and textiles being practically unknown as definitely associated with this culture phase. Tiahuanaco II is a period of very highly developed and widespread culture, which, as the author suggests, is mainly derived from the elaboration of Proto-Nascan elements. The Epigonal of the southern coastal region, and the Red-white-black art of the northern, are to be regarded as continuing the traditions of Tiahuanaco II, though in a decadent and inferior style. The period is one of stagnation and even of decay in art, which may be explained by the evidence of some great, though at present undetermined, disaster which swept the country towards the end of the Tiahuanaco II culture period. In using the term "Epigonal," it would have been well if the author

had defined the use of this word, for the sake of the general reader. The art of Chimú and Nasca cultures reflects the earlier Proto-Chimú and Proto-Nascan art schools. The period is one of elaboration in architecture, especially in that technique which is associated with the employment of *adobe*. The Colla-Chulpa art exhibits in general a marked degeneration, though advance is shown in the bronze work. The most striking feature of this pre-Inca period is the peculiar circular, stone-faced tower, known as *chulpa* (or *chullpa*), which is greater in diameter at the top than at the base, and which abounds as an architectural feature in the Callao district. The Early Inca period is one of renaissance and gradual raising of the culture level. New designs come into existence, as, for instance, the graceful *aryballus* type of pottery vessel. The culmination is reached in the fully-developed Inca or Cuzco culture. The recent researches conducted at Machu Picchu have yielded a vast mass of material throwing fresh light upon this last of the pre-Columbian culture periods.

The whole story of Peruvian art is a fascinating one, and Mr. Means has done valuable work in endeavouring to collate the material in a concise manual for the help of students. Much remains debatable, especially as to the approximate dating of the successive cultures, and the author's chronological suggestions rather fail to convince the reader, since he does not appear to have any uniform basis for his estimates of the number of rulers to be allowed to the successive dynasties.

The illustrations are mostly good, though several are lacking in clearness of definition, and should have been supplemented with clear, diagrammatic sketches of the patterns referred to. Dimensions of the objects figured are not given. A useful bibliography is appended to the book. We may be allowed to deprecate the spelling of the word "artifact," and the expression "derivative of," but these and other minor blemishes do not seriously detract from the value and suggestiveness of the book, which, if read in conjunction with Mr. T. A. Joyce's book on *South American Archaeology*, should prove of much service to students.

HENRY BALFOUR.

Europe: Witchcraft.

Journal of the Manchester Egyptian and Oriental Society, 1916-1917. 46
Manchester University Press. 1917.

The only anthropological article in the present volume is that by Miss M. A. Murray on "The God of the Witches," in which she maintains the thesis that ritual witchcraft "is as clearly defined and organised a method of worship as any other cult, ancient or modern, and may be classed as one of the religions of the lower culture." It is a continuation of the subject treated of in her paper on the "Organisations of Witches in Great Britain" in *Folklore* for September, 1917. Her research has been amazing, extending not merely to works on witchcraft itself, modern and mediæval, but even to judicial records, such as old Lord Fountainball's folios of *Scottish Decisions*. But the bitter theological and ecclesiastical imputations on witches, and the methods employed in the middle ages and since in judicial investigations of accusations of witchcraft, have discredited all the results claimed for them. The worship of a person identified with the devil of Christian teaching is claimed to be proved against the unfortunate persons who were arraigned for the crime. The incidents of that worship are obviously a parody of Christian rites; and they lead to an incurable suspicion that they have no other foundation than the prejudices of their accusers and judges, whose interrogatories were directed, not to ascertaining the facts, but to compelling the victims to yield the evidence desired. It is difficult, therefore, to appraise accurately the few grains of fact that may lie among the bushels of chaff; and a wholesome scepticism is the only reasonable attitude. All one can say is that they probably contain the detritus of earlier religions.

as Professor Karl Pearson contended long ago. But at present, to commit oneself to details on evidence of the kind that Miss Murray thinks sufficient is to build on shifting sands.

E. S. H.

Africa: Linguistics.

Benton.

Primer of Kanuri Grammar (Translated and Revised from the German of A. von Duisburg). By P. A. Benton, Second Class District Officer, Bornu Province, Nigeria. Humphrey Milford, Oxford University Press: London, Edinburgh, Glasgow, New York, Toronto, Melbourne, Cape Town, Bombay. 1917. 130 pp.

The Kanuri language spoken in the Bornu province, west of Lake Chad, is of much importance in the administration of the states resulting from the division of the ancient Bornu kingdom between Great Britain, France, and Germany. It is also largely used by traders in the Central Sudan. The present work is mainly a translation, but Mr. Benton has not hesitated to express his dissent in certain cases from statements in the original work. His classification of the tenses of the Kanuri verb, for example, is independent. The book is published in a more convenient form than Koelle's work, which up till now has been the only English grammar of Kanuri, and one is glad to find that Mr. Benton champions the accuracy of that pioneer of African studies against Duisburg's depreciation.

There are short Kanuri-English and English-Kanuri vocabularies, but these are only supplementary to those of Koelle and the author, published elsewhere.

Mr. Benton has produced a handy, useful, and interesting little book on a language which must necessarily be understood by the official trader or missionary in the Soudan.

SIDNEY H. RAY.

ANTHROPOLOGICAL NOTE.

ACCESSION TO THE LIBRARY OF THE ROYAL ANTHROPOLOGICAL INSTITUTE.

48

(Donor indicated in parentheses.)

The War and the Bagdad Railway. By Morris Jastron, Jr., Ph.D., LL.D. $7\frac{1}{2} \times 5\frac{1}{2}$. 160 pp. 14 Illustrations and Map. J. B. Lippincott Co. 6s. net. (The Publishers.)

Guide to the Musical Instruments exhibited in the Indian Museum. By Dr. A. M. Meerwarth. $9\frac{3}{4} \times 6$. 20 pp. 13 Plates. Government Printing, India. 8d. (The Director, Zoological Survey of India.)

Religions of the Past and Present: a Series of Lectures delivered by Members of the Faculty of the University of Pennsylvania. Edited by James A. Montgomery, Ph.D. $8\frac{1}{2} \times 5\frac{1}{2}$. 425 pp. J. B. Lippincott Co. 10s. 6d. net. (The Publishers.)

The Megalithic Structure of Indonesia. By W. J. Berry, B.A. $8\frac{1}{2} \times 5\frac{1}{2}$. 192 pp. 4 Plates, Illustrations, and 4 Maps. Longmans, Green & Co. 12s. 6d. (The Publishers.)

Aids to the Study of Ki-Swahili. By Mervyn W. H. Beech, M.A., F.R.A.I. $8\frac{3}{4} \times 5\frac{1}{2}$. 159 pp. Kegan Paul, Trench, Trübner & Co., Ltd. 6s. net. (The Publishers.)



FIG. 1.—FRONT VIEW.
LENGTH, 3 FT. 5½ IN.



FIG. 1A.—SIDE VIEW.
LENGTH, 3 FT. 5½ IN.



FIG. 2.—LENGTH, 4 FT. 8 IN.
(HEAD MISSING)



FIG. 3.—2 FT. 4½ IN.



FIG. 4.—2 FT. 3½ IN.



FIG. 5.—2 FT. 1½ IN.

ORIGINAL ARTICLES.

Ethnography.

With Plate F.

Cheeseman.

Maori Burial-Chests. By T. F. Cheeseman, F.L.S., Curator of the
Auckland Museum.

49

The Auckland Museum possesses fifteen chests which have all been found in caves north of Auckland. When found all contained, or had contained, the bones of

deceased chiefs collected after the funeral ceremony called *hahunga*. Eight of these chests have already been figured and described.* Seven others are now shown in Plate F and Figs. 6 and 7.

All the chests have, or have had, wooden lids at the back, which were lashed to the chests.

No. 1, of which both front and side views are shown, has the peculiar feature that the legs show a duplication of the thighs and shins. The figure apparently represents a woman in parturition, a frequent theme in Maori carvings. This chest was found in a cave in the Bay of Islands district.

Nos. 2, 3, 4, and 5 belong to an entirely different type, the base being narrowed to a sharp point, so that the chest could be fixed erect with the pointed end sunk in the floor of the cave. No. 2 contained the bones of a skeleton complete, except for part of the head. Nos. 3, 4, and 5 contained skulls only. These four chests are the only examples of this type which have been discovered.

No. 6 comes from the Hokianga district, and contained some remarkably fine ornaments of nephrite as well as the usual bones. The carving shows some well-developed spirals.

FIG. 6.—LENGTH,
3 FT. 4 IN.

No. 7, which comes from Whangaroa, is carved from the wood of *Metrosideros*. It is much weather-worn, and would appear to be the oldest of all the chests in the museum.



FIG. 7.—LENGTH,
2 FT. 8 IN.

T. F. CHEESEMAN.

Europe: Witchcraft.

Murray

Divination by Witches' Familiars. By M. A. Murray.

50

Among the witches of Great Britain there were three kinds of familiar: (1) the human, (2) the divinatory animal, (3) the maleficent animal. Of these, the first is known throughout Western Europe; the second is common in Great Britain, and known in France; the third is strictly confined to England only. Much confusion occurs owing to the fact that all three kinds of familiar were regarded as

* *Trans. New Zealand Inst.*, 1906, Vol. XXXIX, p. 451.

substitutes for the Devil, and are freely spoken of as the Devil. They should, however, be called "Imps" or "Familiars"; and in Essex they were known as "Puckerels." I propose to bring forward in this paper facts to show that some of these "imps" were really animals used for divining.

Forbes, the great Scotch lawyer, exactly describes the position when defining the contract between the Devil and the witch: "The Devil on his Part articles " with such Proselytes, concerning the Shape he is to appear to them in, the " Services they are to expect from him, upon the Performance of certain Charms " or ceremonious Rites."*

A great part of the witches' business was to foretell the future, to discover stolen goods, and to cure diseases when the legitimate mediciner had failed. All these actions were performed by the help of the familiar, from whom the witch was accustomed to "seik responsis." The Devil appears to have appointed to each witch, on her admission, one or more animals for divinatory purposes. They were usually common animals—a horse, a dog, a bird, and in Scotland sometimes a stag. In Great Britain it seems to have been essential that the animal should not belong to the witch, but should appear to her after "the Performance of certain Charms " or ceremonious Rites"; and any animal of the given species, which came into view after the magic words were spoken, was regarded as the emissary or substitute of the Devil. The movements of the animal were observed according to some definite system, and the witch was thus enabled to answer the inquiries made of her. The method was probably traditional, and was taught to the witch sometimes by the Grand Master or "Devil," sometimes by one of the senior witches.

The case of Agnes Sampson, of Nether Keith, in 1590, brings out these points very clearly. She was tried for high treason, in that she made an attempt on King James VI's life by means of witchcraft. She was "a woman, not of the base and " ignorant sort of witches, but matron-like, grave and settled in her answers, which " were all to some purpose. In her examination, she declared that she had a " familiar spirit, who, upon her call, did appear in a visible form, and resolve her " of any doubtful matter, especially the life or death of persons lying sick."†

In the trial she was accused of having practised regularly as a witch, and examples of her witchcraft were charged and proved against her. Of these charges there are several which state that her fore-knowledge of events was obtained by means of the Devil, and that the animal by which she divined was a dog.

"Item, fylit, that she had fore-knowledge by her Witchcraft of diseased persons, if they would live or not. Item, fylit and convict, that she fore-knew of the Devil, and told Patrik Porteous, that he would live but eleven years. Item, fylit, that she was made fore-knowing of the Devil, of the last Michaelmas storm. Item, fylit, that she was made fore-knowing by the spirit, that the Queen's Majesty would never come in this country, except the King fetched her. Item, fylit and convict, that the Devil appeared to her in likeness of a dog, at whom she sought her whole responses; and when she put him away she charged him to 'depart on the law he lives on'; who with they word's is conjured and passes away. Item, fylit and convict, that when she was send for to heal the old lady Edmestoun, when she lay sick, before the said Agnes departed, she told to the gentlewomen, that she should tell them that night whether the Lady would heal or not; and appointed them to be in the garden after supper, betwixt five and six at even. She passed to the garden, to devise upon her prayer, on what time she charged the Devil, calling him 'Elva,' to come and speak to her, who came in over the dyke, in likeness of a dog, and come so near her, that she was effrayed, and charged him 'on the law that he

* Forbes: *Institute of the Law of Scotland*, II, pp. 32-4.

† Spotswood: *History of the Church of Scotland*, p. 383, ed. 1668.

lived on,' to come no nearer, but to answer her; and she demanded, Whether the lady would live or not. He said, 'Her days were gone.' Then he demanded, 'If the gentlewomen her daughters. where they were?' And she said, that 'The gentlewomen said, that they were to be there.' He answered, 'One of them should be in peril, and that he should have one of them.' She answered, 'It should not be so,' and so departed from her yowling. From this time till after supper, he remained in the well. When the gentlewomen came in, the dog come out of the well, and appeared to them; whereat they were effrayed. In the meantime, one of the said gentlewomen, the Lady Torsenye, ran to the well, being forced and drawn by the Devil, who would have drowned her, were not the said Agnes and the rest of the gentlewomen gat a grip of her, and with all their forces drew her aback again, which made them all afraid. The dog passed away thereafter, with an yowl."*

The familiar by which the Derbyshire witch, Also Gooderidge, divined was a dog belonging to a neighbour. The dog's master objected, and requested that his dog should not be used for the purpose.†

Margaret Clark, of Aberdeen, was tried in 1597 as a witch, and was accused of conference with animal-familiars. She was a midwife, and being sent for to a case "and one Androw Man coming for thee, the Devil thy master, whom thou serves, and who teaches thee all this witchcraft and sorcery, appeared to thee, in the likeness of an horse, in an how or den, and spake and conferred with thee a long space.—Upon New Year's day, thou was at the loch side beside Boigloch, and there thou puddled by a long space, thy self alone, in a deep hole amongst the water, casting water, earth, and stone over thy shoulders, and there was beside thee thy master the Devil, whom thou serves, in the likeness of an hen flichtering, with whom thou was then consulting, and whose directions then thou was taking."‡

Alexander Hamilton, a Lothian witch, made a contract with the Devil: "After the which paction and agreement made and comed to betwixt them the said Alexr then having a baton of fir in his hand the Devil then gave the said Alexr command to take that baton when ever he had ado with him and therewt to strike thrice upon the ground and to charge him to rise up foul thief Conforme to which direction and by striking of the said baton thrice upon the ground, the devil was in use sometimes to appear to the said Alexr in the likeness of a corbie at other times in the shape of a cat and at other times in the shape of a dog and thereby the said Alexr did receive responses from him."§

Elizabeth Style, a Somerset witch tried in 1664, was accustomed to call for "Robin," and on the appearing of a black dog, "she useth these words *O Sathane, give me my purpose*. She then tells him what she would have done. And that he should so appear was part of her contract with him."||

One of the latest trials, that of Margaret Nin-Gilbert, of Thurso, in 1719; shows the confusion which the recorders often made between the real Devil or Grand Master of the witches and the animals which represented him, in this case a horse and a hen. There is also an interesting variant in the use of black clouds: "Being interrogat, If ever the devil appeared afterwards to her? Confessed, That some times he appeared in the likeness of a great black horse, and other times riding

* Pitcairn: *Criminal Trials*, I, pt. ii, pp. 332-6. Spelling modernised.

† *Also Goodridge*, ed. 1597.

‡ *Spalding Club Miscellany*, I, pp. 157-9. Spelling modernised.

§ From the record of the trial in the Justiciary Court of Edinburgh, under date January 22, 1630. Spelling modernised.

|| Glanvil: *Sadducismus Triumphatus*, Pt. II, p. 137.

"on a black horse, and that he appeared sometimes in the likeness of a black cloud, and sometimes like a black henn."^{*}

The divinatory animal was known also in France. The conditions there were, however, rather different from those in Great Britain. The creature was always a toad, presented by the Devil to the witch on her admission into the society; it was kept in the house as a kind of pet, and was used for divination in matters affecting the owner only. Silvain Nevillon, tried at Orleans in 1614, "dit qu'il y a des Sorciers qui nourrissent des Marionnettes, qui sont de petits Diablotaux en forme de Crapaux, et leur font manger de la bouillie composée de lait et de farine, et leur donne le premier morceau, et n'oseroient s'absenter de leur maison sans leur demander congé, et luy faut dire combien de temps ils seront absens, comme trois ou quatre iours, et si elles disent que c'est trop, ceux qui les gardent, n'osent faire leur voyage outre-passer leur volonté. Et quand ils veulent aller en marchandise, ou iouer, et sçavoir s'il y fera bon, ils regardent si lesdites Marionnettes sont joyeuses, en ce cas ils vont en marchandise, ou iouer: mais si elles sont maussades et tristes, ils ne bougent de la maison."† M. A. MURRAY.

Ibo: Folk-tales.

Thomas.

Stories (Abstract) from the Awka Neighbourhood (V). By N. **51**
W. Thomas.

17. THE TORTOISE AND THE EAGLE.

One day the ground squirrel took a double bell and called the animals. He said he had a fine girl, they must come. The squirrel showed them his daughter and said he had a big farm, and the animal that planted one line of yams and finished first should marry his daughter. "All right," they said.

The tortoise used to take eight days to plant his row. The girl cried, "I can't agree to the tortoise." "Don't mind," said the ground squirrel.

The eagle said he could go quicker, any time would do. He cut palm nuts and gave them to his mother, and said "Clean them." Then he went to get tombo. His mother cooked chop and the eagle ate it. He told his mother to pound *ohbaka*, put it into a bottle, and stick a spoon into it. Then the eagle went off with hoe and bottle. Some of the animals had done half, some more. The tortoise had twelve heaps to finish (out of ? 150) (the animals said in twenty-four days they would come, the tortoise began in sixteen days).

When the eagle found the animals making heaps he gave them palm nuts and *ohbaka*. "Oh, too sweet, give me more," they all said. "Wait," he said, and so on. The tortoise had only two heaps to make, but he fell a victim, and the eagle got the ground squirrel as a wife.

The eagle flew up to the sky. His wife marked him one day, and he tied good cloth and said he was going to work on the farm. He saw the tortoise, who asked to see the marks. "Oh, I will ask your wife to mark me," said the tortoise. "All right," said the eagle, "but don't take my wife, you are too cunning. I will follow you." "I won't deceive you," said the tortoise. "I will follow you," replied the eagle.

The eagle told his wife to throw the heaven-rope down. The tortoise climbed up, looked round, begged the wife, and said he would come one day. "All right," she said. The eagle's wife brought the heaven-rope and the eagle went too.

The tortoise called the animals to his house and said, "I know how the eagle's wife lives in the sky. He calls his wife to throw the rope. Let us go and climb."

* Sharpe: *Historical Account of Witchcraft in Scotland*, p. 191.

† De Lancré: *L'Incrédulité et Mesoréance*, p. 802.

The tortoise called the eagle's wife. He told her to throw down the string, and she thought it was her husband. The tortoise said he would climb last, then the eagle's wife would not know he had called them.

When they were near the top a bird went to the eagle at the farm and let fall droppings on his back. The eagle stood up and asked where it was. "May the hunter kill you," he said. "I come to tell you something," said the bird. "The animals are going to steal your wife and cut the rope."

The eagle went and called to his wife, "Take a knife and cut the rope." All the animals fell out and the tortoise broke all his skin and could not stand up again.

Okbu (grasshopper) came out and met the tortoise. The tortoise begged Okbu to sew him up, saying he could get land in payment. The snail came and met the tortoise. The tortoise explained and asked the snail to help Okbu to sew him and rub his skin smooth; he would give him okwa tree, he said. Añanri came and met the tortoise. The tortoise explained and asked Añanri to help the snail and Okbu to sew him and rub his skin smooth; he would give him palm tree, he said.

The animals met and sewed him. Then Añanri cut down palm tree and found the nuts were not ripe. The tortoise told Añanri to come down and then broke it in two, joined it with *ogili*, and said, "I have paid you."

The okwa tree was ripe and Okbu went to take it for the snail. The tortoise threw a stone and hit the grasshopper. Okbu threw three okwa down at the tortoise, but missed him, and ran away. Then the tortoise knocked the snail on a stone, mended it with mud, and said, "I have paid you."

Okbu planted yams on the land and they got good roots. Okbu sent the snail to get the yams, and the tortoise said he would go too. The snail told *ji abana** to bend so that he could dig it. Then the snail dug. The tortoise stole the yams another day. He told abana to bend and abana threw him on the iroko tree. The tortoise called his wife to put down sand for him to fall on. "Do you tell me to bring a stone?" she asked. "No," he answered, and abused her. His wife really knew. "Bring me some sand to fall on," he said. "Do you say a long basket?" she asked. "No," he answered, and told her a third time, "Bring me some sand to fall on." Then his wife put some stones and covered them with a little sand. The tortoise fell and broke his back, so he told his wife to call Okbu to mend him. Okbu came and was promised a he-goat. "We will be good friends," they said, "and ask each other for a feast." The tortoise told the grasshopper to come. The tortoise cooked some soup at midnight. The soup was cold at dawn, and the tortoise went inside and told his wife to put fufu on the pot when Okbu came, and show him the small fish (i.e., the tortoise) in the soup.

When Okbu came the tortoise's wife gave him chop. He ate fufu, put his hand in the soup, saw the tortoise, and said, "I will eat him." He licked him and the tortoise fell. "Oh, you can't eat me if I keep quiet," said the tortoise. Then Okbu said, "Let us drink palm wine." They drank. "How did you go into the soup?" asked Okbu; "before or after cooking?" "As soon as it was cooked," answered the tortoise.

The tortoise said he was coming to Okbu's place. He went, and the wife of Okbu said Okbu was not there; he was getting palm wine. Okbu was inside the soup; he went in while it was hot and it killed him. The wife of Okbu gave soup to the tortoise, who found the dead Okbu in it and ate it. Then he asked for palm wine and got it. After that the tortoise said he was going, and left a salutation for Okbu.

The wife of Okbu got a child. It grew up and the wife to it to make a second

* *Ji abana*, a kind of yam.

burial for his father. "No," said the boy, "I did not know him." So the wife of Qkbu threw the boy in a hole.

A pigeon collected food in the hole, saw the boy, and asked what it was. "Mother threw me in," said the boy. She took it home.

18. THE TWO BOYS.

A woman conceived often, but the children died. She asked a doctor and he divined. She conceived and bore a living child and called him Amačamifowa (*A*). Then she bore another boy and called him Amačagaifeowa (*B*).

She fell sick; the boys said, "Let us get firewood for her." *B* went to the back of Čuku's house and cut wood. Čuku said, "Who is that?" "I, *A*," he replied; "All right; the wood shall stop in the ground, the axe in the wood, and the hand on the axe," said Čuku. And it was so. *B* nearly died. Then Čuku called and said, "Wood come out of the ground, axe out of the wood, and hand from the axe," and it was so. *A* came and quarrelled; he took the axe and cut firewood in the back of Čuku's house. Čuku called. "I, *A*," he answered. "All right," said Čuku, "the wood shall stop in the ground, and the axe in the wood, and the hand on the axe." *A* called out to Čuku, "May you swell, may you fill the house and come outside too." So Čuku swelled and could not speak. *A* could not move.

A boy in another house in Čuku's place asked who was breaking wood in the back of his father's house. *A* said, "I." He said, "Let the wood come out of the ground, the axe out of the wood, and the hand off the axe." And it was so. *A* then called out, "Let Čuku dry, etc." So Čuku recovered.

Čuku went to *A*'s house and said he would come up for *A* to shave his head. *A* took a skull, took corn leaves off and put the corn in a calabash. Čuku came; *A* said he was working; Čuku said he would shell corn if *A* would shave his head.

A shaved the head and Čuku rubbed his hand over his head and said, "Why did you shave all my head; put it back." *A* said, "Take the corn cob and put the seeds back." Čuku could not do it, so he went.

Čuku gave *A* a round basket to fetch water; *A* took cassava, spread it, and put a circle round it, and told Čuku to carry it in when it rained.

Rain fell when *A* went to the water; Čuku tried to carry the cassava and ground, but could not. *A* could not carry the water, so he washed and went home. Čuku asked, "Why is there no water?" *A* asked, "Why is the cassava not carried in?" "Did you ever see a man carry land on his head?" replied Čuku. "Did you ever see a basket for water?" answered *A*.

Čuku called *A* and *B*; he gave *B* one cow and *A* one bull. "Keep them for seven years, and each year you will have one calf," he said. They did so, but *A* got no calves. *B* went and Čuku asked for *A*. "*A* has stranger at home," said *B*. "All right." Čuku and *B* shared the cows. *B* went home.

A took the bull and went to Čuku and said it got no calves. "Take the bull back," but Čuku would not take it. *B* threw it into the house and went.

19. THE TORTOISE AND THE ANIMALS.

The tortoise beat a bell and called the animals. He said, "We will clean the place, and no one shall defæcate there; if anyone does we will kill it."

Tortoise went and defæcated and put pepper on the dung and said it was to say it was the monkey. Tortoise asked it, and the pepper said "Monkey." The animals came, caught and killed the monkey, and gave the body to the elephant. "If you eat the meat we will kill you," they said. The elephant went to cook it

and put it in a room and then went to sleep. The tortoise went and ate the meat.

At dawn all met in an open place. The tortoise said, "Let us go to the elephant's house and share the meat." The elephant could find nothing. The tortoise said, "Let us kill the elephant." So they killed the elephant and gave it to the grasshopper to cook and keep. The tortoise stole the meat.

When the animals came to share the meat there was none. So they killed the grasshopper and gave it to Agu okbú, that is, the brother of the leopard.

At dawn they found the meat was gone, so they killed Agu and gave it to Ntę, a small grasshopper. Ntę cooked the meat and put it on the top of the house. Then he took a knife, sharpened some arrows, made a bow, and kept watch.

The tortoise came and called, "Ntę, my brother." Ntę aimed the bow. The tortoise gave three calls and then climbed on to the house. Ntę shot it in the head. The tortoise looked up and down, but saw nothing, and ate again. Ntę shot it in the belly and it fell from the house; then Ntę shot it near the ear, and the tortoise ran.

Ntę caught it, and the tortoise said, "Don't kill me; we will be good friends." He knelt and said if Ntę told the animals they would kill him, the tortoise. He said he would come at night, but did not go. Ntę sent a message "at dawn," but still he did not go. So Ntę and tortoise were not friends. N. W. THOMAS.

Malta: Geology.

Boyd Dawkins.

The Maltese Cart Ruts. By W. Boyd Dawkins, M.A., D.Sc., F.R.S.

52

In MAN, 1918, 40, Captain Fenton describes in considerable detail the more or less straight parallel grooves which traverse the calcareous rocks of Malta as "cart ruts," and enters into speculations as to the time when they were worn by prehistoric carts. As these "ruts" pass over the edge of the cliffs, and plunge into the waters of the sea, he takes them to imply that they were worn by carts at a time when Malta had a geography differing from that of the present day. Professor Zammit assigns them to the Neolithic Age, and they are generally taken locally to have been made by cart wheels.

Fortunately the two photographs (Figs. 1 and 2) in the article decide without doubt that they are not artificial, but due to the weathering of the rock under natural conditions. They are merely the ordinary joints, widened and eroded by the rainwater containing carbon dioxide, familiar to geologists in all limestone plateaux exposed to the rain—such as "the pavements" of Yorkshire and the Lake District, and to be seen over very wide regions in Southern France. In both photographs the two main lines of joints are clearly defined, the one—the "cart rut"—passing from the foreground to the horizon, and the other more or less at right angles. In Malta, as in all other places which I have examined, they will probably be found to run in two principal directions, the one slightly to the east of north, and the other slightly to the south of east. They are merely lines of shrinkage, due to the contraction of the rock, and widened afterwards by the rain. They have no archaeological significance.

W. BOYD DAWKINS;

British New Guinea: Fishing and Magic.

Malinowski.

Fishing in the Trobriand Islands. By Bronislaw Malinowski, D.Ph. (Cracow), D.Sc. (London).

53

I. INTRODUCTORY REMARKS.

Boyowa, the largest island in the Trobriand Archipelago, is a coral island provided with a fringing reef on the north, east, and south. On the western side there is an extensive lagoon, sheltered by a chain of reefs and small islands. There

are plenty of opportunities for fishing, and, as the inhabitants of this densely populated island are both skilful and industrious, it is not astonishing to find that fishing is highly developed, and that it is, after gardening, the most important economic pursuit. Fish constitute the staple form of their flesh diet, since neither hunting nor domestic animals (pigs and fowl) provide sufficient meat even for festive occasions. A good number of villages possess direct access to the sea, and from them the others can obtain fish by means of a well-regulated system of barter.

The fishing in the shallow waters of the lagoon naturally differs from that on the fringing reef or in the open sea, and the three types must be described separately.

II. FISHING IN THE LAGOON.

Here, in water almost constantly calm, fishing can be done all the year round, and it has developed into a regular trade, as the villagers are often requested by an inland community to provide fish in exchange for yams. A number of very large villages lie on the shore among the palms that grow near the salt water. Each village has its own fishing grounds, upon which strangers very seldom trespass, though some fighting for that reason is on record. Some of the villages control coral patches in the lagoon, which afford specially good opportunities for fishing by means of the poisonous root of a creeper (*tuva*). These patches are owned by individuals, trespass being considered equivalent to theft, but it is usual for other men of the same village to hire a patch. In the villages where patches are owned, fishing with the poison root only is practised, this form being by far the easiest and most reliable. A few men paddle in a fishing canoe to a place above a patch and cast a net so as to surround it completely. A parcel with some freshly-pounded *tuva* root is attached to the end of a long stick. A man dives and inserts this stick into one of the cavities with which all coral patches are riddled. Any fish in the hollow, i.e., in the neighbourhood of the poison, come up to the surface, and are either so dazed that they float inert on the water, or else try to escape and become entangled in the net.

In villages which possess no claims to a patch the fish are simply caught in nets stretched between two canoes.

Besides these two main forms of fishing there are minor ones—by means of weirs, fish traps, and hand nets. The sting ray is taboo to a large number of villages, but there is one in the northern part of the island where this fish is eaten, and the inhabitants go out into the lagoon with long sharp poles to catch it.

III. FISHING ON THE FRINGING REEF.

This fishing is carried on by the villages situated near the seashore on the north-eastern and southern sides of the island. As the prevailing winds strike the eastern and southern shores for about six months of the year and the northern shore for three months, fishing can only be done seasonally from these villages. Moreover, the yield is limited, since, instead of the considerable area of the lagoon, where fish are plentiful, there is only a narrow belt of water between the beach and the fringing reef, where there is no great abundance of fish. It is, therefore, only a kind of sport, and, with two exceptions to be mentioned below, is not practised as a trade, nor do these villagers rely upon their own supply in the case of large feasts.

The mode of catching the fish is by means of long narrow nets. Such a net is set in a gap of the fringing reef and held at both ends by two men. Ten to thirty others start in a large semicircle and drive the fish from the shallow water into the net.

In some villages they used to catch fish with tortoise-shell fishhooks, now

entirely superseded by those of steel. Fishing at night with torches is also practised.

IV. SPECIAL FORMS OF FISHING ON THE NORTHERN SHORE.

The villages here have more calm weather than those on the eastern shore. Two villages have developed special forms of fishing.

1. *The Kalala Fishing in Labai.*—The *kalala* fish (mullet?) arrives on this coast periodically in large shoals at spawning time. This happens every few months during the calm season, always at full moon. Large numbers of fish, seeking estuaries in which to spawn, enter the shallow water between the beach and the fringing reef. The villagers, who are always on the look out for the fish about full moon, are ready camping on the beach. They are provided with long square nets of the ordinary type, and triangular hand nets. When the shoals are sighted, the long nets are cast in such a manner that an area is enclosed near the beach, an opening being left at the east end, for the fish always swim from east to west. The fish enter the enclosed area in large numbers, the later arrivals pressing on the earlier ones. These are pushed towards the large nets, and jump out of the water in order to get over the obstacle. But all round the large immersed net stand a row of men, each holding a triangular hand-net, in which the fish are caught as they jump out of the water.

2. *Shark Fishing in Kaibuola.*—This is done in the open sea, far beyond the fringing reef, in special small canoes. One fisherman mans each canoe, and, equipped with a large wooden shark-hook (now gradually superseded by pieces of thick metal wire), with a decoy-rattle and with a short thick piece of wood, paddles out into the open sea, as a rule out of sight of land. Here the rattle, which consists of coconut-shell segments threaded on a bent stick, is sounded under water. This gives a very good imitation of the noise made by a shoal of fish jumping out of water. A shark, attracted by this noise, approaches the boat and snatches at the baited hook. It is then drawn towards the boat, where the man finishes it with a piece of wood.

Shark fishing is done only during the calm spells between the seasons, as a rule during the spring calms in October and November, when the south-east trade wind changes into the north-west monsoon.

V. THE ECONOMIC ASPECT OF FISHING.

In fishing, as in all other economic pursuits, the rights and privileges of ownership are strictly regarded in Kiriwina: the rights of a community or individual to certain fishing places; the claims of the owner of a canoe, net, or other equipment to a specific share in the quarry, the duty of distributing portions of the yield among the participants in a fishing expedition as well as tributes to certain other privileged persons; all these are matters of prescriptive right. The individual ownership in coral patches has been already mentioned. If the owner of such a patch organises a fishing expedition, he has to give definite portions of fish to his assistants. If another man hires a coral patch, he has to make a certain definite payment to the owner. In the other form of fishing, practised on the lagoon, the owner of the canoe from which the fishing is done receives the largest share, but all the participants get their due according to fixed rules.

When the natives of the eastern villages organise a fishing expedition on the fringing reef, a form of sport to them rather than a serious economic pursuit, all those present receive an equal share of the yield, the owner of the nets not being privileged in any way.

In shark fishing, if the owner of the canoe goes out himself, he of course keeps the whole of the quarry. If a man goes in a hired canoe, he has to give certain

parts of the shark caught to the owner, whereas all those taking part in the fishing for the *kalala* retain their own catch. Both the shark and the *kalala* are sent in roughly prescribed quantities to the chiefs in some inland villages, as a tribute from the villages of Labai and Kaibuola respectively.

To understand these economic relations it is necessary to keep in mind certain general facts; as a rule the catch is plentiful, often so plentiful that part must be thrown away, as there are no means of preserving the fish. There is no inducement, therefore, for anyone to be mean, and as a rule everybody in the village, and even in the neighbourhood, gets his share. But the privilege of giving is very highly valued by the natives, and the distribution of the catch must proceed according to customary rules, no intermediate link being skipped.

The man in charge—whether the owner of some privilege or the organiser of a feast—must secure his portion and see that his assistants get their shares, and then everybody gives a part of the yield to his relatives, relatives-in-law and friends, again according to fixed rules, and in definite order, if possible. After this ceremony of customary presentation is over, all the inhabitants of the village get as much as they want, including dogs, cats, pigs, white men, and their native cooks. But none the less, the customary forms of distribution must proceed along the prescribed channels.

VI. MAGIC IN FISHING.

Success in most economic pursuits depends in the eyes of the natives upon the performance of effective magic. Thus gardening, the most important of these pursuits in Kiriwina, is closely bound up and regulated by elaborate systems of magic. It would be natural to expect that the pursuit next in importance—fishing—would be quite as much under its sway. Remarkably enough, this is only partially true.

As mentioned above, in the western villages fishing in the lagoon is an activity which always gives an abundant yield, without uncertainty and without risk to the fishermen. This is especially true in the case of fish poisoning among the coral patches, where a man is sure to obtain an abundant catch easily each time he goes out. Now there is absolutely no magic in connection with fish poisoning, and very little in connection with the ordinary fishing by means of nets.

Yet on the northern shore, both in the *kalala* and shark fishing, we find that the whole proceedings are absolutely governed by magic. Thus the *kalala* fish must, in the natives' belief, be drawn by magic, and the success in fishing is, according to them, entirely dependent upon the strict observance of numerous taboos and the performance of certain rites. Shark fishing is hardly less subject to magico-religious observances, the construction of the special canoes, the opening of the fishing season, and the actual expeditions, being all connected with magical ceremonies and taboos. It is important to note that in contrast to the state of things on the lagoon, here, on the northern shore, the elements of chance and risk are quite prominent in the fishing.

As the magical proceedings give to both forms of fishing a distinct character, a short account thereof must here be given.

VII. MYTHS, MAGIC, AND TABOOS OF THE *Kalala* FISHING.

The mythical hero, Tudava, who looms conspicuously in the legends of the archipelago, was born in Labai, and his mother also gave birth to the first *kalala* fish. Tudava ordered this fish to go south to the d'Entrecasteaux group, and to come back to Labai at full moon, so that the village might have a supply of food. On the other hand, he gave the village magic to draw the fish. This magic is preserved and handed down by each successive headman of Labai, who is a direct descendant of Tudava in the maternal line. The hero also imposed certain taboos

on the village, which are connected with the *kalala* fishing: no dancing, singing, or beating of drums is allowed in Labai, and the central place of the village is overgrown with trees, which may not be felled. The jungle between the village and the beach is also protected; here too, neither trees may be felled nor shrubs damaged. The taboos become much more stringent when the fishing period at full moon approaches: all strangers are rigorously excluded from the beach and its approaches; on the other hand, all the men of Labai must be in the village or on the beach, and they may not be absent on travels during the fishing season. The magician has to observe a few taboos, among others he is forbidden to touch the *kalala* fish.

When full moon approaches and the natives expect the fish to arrive soon, the magician sweeps his house and its surroundings, muttering a spell in which he invokes the names of certain ancestors. This is done so as to "keep the way clear for the *kalala*." The next day, early in the morning, all the men follow the magician to the beach. A few yards away at a definite spot, the magician puts an uprooted *libu* plant across the path and recites a spell over it. From this moment the beach is taboo to all strangers, and the fishing period begins. The villagers camp on the beach, ready to cast their nets, and some even spend the night there. Every spot has its name, its traditional story, and its functions, *e.g.*, here is a sacred stone which no one else is allowed to approach, where offerings to ancestral spirits are laid by the magician during the *kalala* fishing; there is a special part reserved for fire and cooking; there is a place from which a look-out is kept for the fish, and several other spots of minor importance. On the day following the ceremonial march to the beach more magic formulæ are said over the fishing nets and over certain herbs which are supposed to attract the fish.

VIII. LEGEND, MAGIC, AND TABOOS CONNECTED WITH SHARK FISHING IN KAIBUOLA.

The natives tell a story how formerly shark fishing was carried on from another village on the north-west shore, its coming to Kaibuola being the result of a quarrel. The man who brought it handed the magic to his wife, since when it has been transmitted to her descendants, always in the maternal line, as is the general principle of inheritance in Kiriwina. There are no permanent taboos observed by all the inhabitants of Kaibuola, though the magician has to abstain permanently from the flesh of several fishes and birds, and especially from eating shark.

At the beginning of each shark-fishing season new canoes are built, and the old ones overhauled. The bulk of the shark magic is performed in connection with this activity. When the season approaches, the owners of canoes needing repair, and the intended owners of new ones, consult with the magician and offer him presents. On an appointed day, the magician performs a rite in his house, offering some food to ancestral spirits and reciting a spell. During the rite the presents he has received are exposed in his hut. After that, the men get the timber into the village and proceed to work at the canoes for a couple of weeks. This is the period of the strictest taboos observed by the whole community. No noise is allowed in the village, no hammering of wood against wood or working with implements, no noisy playing or games. Neither men nor women adorn their bodies or comb their hair, nor do they anoint themselves with coconut oil. Women are not allowed to make any "grass" petticoats. The whole village have to keep the sex taboo, and all strangers are strictly forbidden access to the village. These two last prohibitions last only during the short period of building and overhauling the canoes. The remainder are kept throughout the shark fishing season, though less rigorously after the work on the boats is finished.

When all the boats are ready the magician utters charms over certain herbs, with which the canoes are rubbed. The fishing implements also have incantations chanted over them, and the fishermen proceed ceremonially on the first fishing expedition. The greater part of the quarry caught during the first outing is sent to the main chief in the village of Omarakana.

During the whole season of shark fishing, which lasts for about two moons, the magician keeps certain special observances and performs certain rites. Thus he has to abstain from sexual intercourse, in fact, his wife and family move away from the house, in which he remains alone, keeping the interior and the surroundings of his hut clean and tidy. He must keep to the village, as he is forbidden to hear the sound of drums or of song. When the fishermen go out on an expedition, he opens wide the door of his house and sits on the platform without his pubic covering, keeping the legs apart. This is said to make the shark keep his mouth wide open and catch on to the bait. Sometimes the magician sits in the same attitude and condition on the beach, singing a song of magical import to attract the shark.

Thus fishing, an activity of great economic importance and a favourite sport all over the Trobriands, ranges from a purely economic pursuit to almost a magico-religious ceremony. In fact, the *kalala* fishing in Labai is surrounded with more numerous and more stringent taboos, and is more bound up with tradition and ceremonial than any other social activity in the Trobriands. B. MALINOWSKI.

Japan: Folklore.

Hildburgh.

Notes on Some Japanese Methods of Personal Purification after a Funeral. By W. L. Hildburgh.

54

Contact, or even association (including that by relationship), with a corpse is regarded in Japan as a source of ritual uncleanness from which the person who has become thus impure may require early purging, lest he bring misfortune upon himself or upon others. Attendance at a Buddhist funeral being looked upon as a cause of such impurity, a person returning from one is subjected to a form of purification before he (or she) enters his (or her) house. The misfortune which may be brought about by a person newly coming from a funeral is generally ascribed to the wrath of some Kami (*i.e.*, Shinto divinity) who has been offended by the proximity of the impure person.* And that misfortune is thought not necessarily to fall upon the offending person, but to be liable as well to affect some other member of the household—though whether because of some belief in an infectiousness of the state of impurity which may lead to the anger of the divinity falling upon some person actually innocent of offence; or due to a notion that the divinity holds all the members of the household responsible for the affront to him and may strike at the household through any one of its members; or as the result of an idea that while the divinity is angry he ceases to protect any of the household from the lurking supernatural beings seeking to injure them, I do not know. The following is an example showing a misfortune supposed to result from a neglect of the precautionary purification mentioned:—

On returning home from a Buddhist funeral, a boy mischievously omitted to purify himself, by washing his hands in the vessel of water specially provided for the purpose, before entering the house. One of the servants of the household having, soon after this event, become ill, the boy was questioned as to his behaviour,

* When a person has been buried according to the Buddhist rite, then during a mourning period of fifty days (some people say that twenty suffice), while the members of the family are in a state of impurity, "the kamidana must be entirely screened from view with pure white paper" and even the Shinto ofuda, or pious invocations fastened upon the house door must have white paper pasted over them." L. Hearn, *Glimpses of Unfamiliar Japan*, 1894, p. 401.

and, having confessed his neglect, the misfortune was ascribed to his transgression, for which latter he was then severely punished [Chikuzen province].* Similar washing, as a means of ritual purification, is of very ancient standing in Japan—Chinese travellers to Japan, “centuries before the *Kojiki* and *Nihongi* were written,” say that there was a “practice, when the funeral was over, for the whole family of “the deceased to go into the water and wash.”†

A common form of purification for a person returning home after a funeral is the throwing of salt upon him, before he enters the house, by a person who has not attended the funeral [Yokohama]. Similarly, salt, scattered immediately about the room where the corpse has rested‡ and about the threshold, and then swept out, is employed for the purification of a house as soon as the body of a dead person has been taken away from it, just as it is used in the preparation of spots which, for religious or for magical purposes, require to be placed in a condition of ceremonial purity. The anti-spectral virtues attributed to salt lead not only to its employment as a dispeller of evil influences already acquired, but also to its use as a preservative against the acquirement of such influence or against the machinations of evil supernatural beings.

If a person, after attending a funeral, goes to a tea-house before returning home, his purification by means of salt, before entering his own house, becomes unnecessary [Yokohama]. Why this should be my informant (a keeper of a tea-house) did not tell me. I think that possibly the tea taken is thought to serve as a sufficient purification, because the drinking of a cup of tea before leaving one's house in the morning is sometimes believed to keep one safe from accidents while away from home during the day;§ or that, perhaps (as my informant told me that the impurity remains at the tea-house) there is a belief either that the cause of the state of impurity stays in the first dwelling into which its bearer enters, or one that the presence of a more or less noisy crowd of people tends to drive it away from its bearer.] We may observe, incidentally, that since a tea-house is open to any passing stranger, it may receive unawares at any time a person who is (due to any of the various causes of such impurity) ritually unclean, and that it must therefore be so arranged that no harm shall come to its household or its guests throughout the presence of such a person.

Seemingly closely allied to the belief in the necessity of a personal purification after attendance at a funeral, is the belief that if for some reason—such as the lateness of the hour preventing his return home on the day of the funeral—a person who has been to the funeral sleeps in the house of the deceased during the night following it, that person, in order to avoid some misfortune occurring to him, should sleep in the same house again, seven days later [Yokohama]. There are, however, methods, should the person be unable to repeat his stay at the house, or be seriously inconvenienced thereby, for avoiding the evil results feared. To this end he may, should he be elsewhere than at the house of the deceased on the seventh night, set

* Place names given thus identify the localities in which I recorded the respective beliefs or practices cited, or those where they had been observed by my Japanese informants.

† W. G. Aston, “Japanese Myth,” in *Folk-Lore*, Vol. X, p. 302.

‡ A curious parallel to this is the scattering of salt about the room in which an unwelcome guest has been, with the especial aim that he shall not return to the house. Whether the effect here desired is thought to be based on a clearing away of all psychical traces of the visitor, or whether it is referred to the actions of supernatural beings to whom, perhaps, a message is thought to be conveyed by the scattered salt used as a symbol (cf. MAN, 1917, 2), I do not know.

§ J. Inouye, *Home Life in Tokyo*, Tôkyô, 1910, p. 140.

|| In China, a certain character “which means boisterousness of a crowd, has for many centuries been one of the best among devil-expelling charms.” J. J. M. de Groot, *Religious System of China*, Vol. VI., Bk. II, p. 1144.

one of his sandals or his clogs out of doors for the night [Yokohama and Tōkyō]; or he may, in anticipation, cross a bridge before he returns to his home [Echizen; reported at Yokohama]. What the reason for these beliefs is I have not been told. But we may guess that it is connected with the conceptions underlying the beliefs that "For forty-nine days the spirit of the dead wanders in the dark space intervening between this world and the next, and every seven days it makes an advance forward, in which it is materially helped by the prayers of those it has left behind; according to some, the spirit hovers for the same period over the roof of its old home, for which reason many people dislike to remove until the period has terminated from a house in which a member of the family has died, as his spirit would have to hover over a house deserted by those he loved."* The placing of the piece of footwear out of doors is intended, I think, either to give the spirit of the deceased something to return to and to work upon in the place of the owner of the footwear, or else to convey to the spirit the idea that the owner is not in the house, because footwear is operated upon, in order to influence its owner, in various Japanese magical operations, while in some others it appears to me as if intended actually to represent its owner. We might guess that the bridge to be crossed in the Echizen practice must be one over running water, were it not that there are other explanations of the effect of crossing a bridge which may plausibly be advanced, and that the data accompanying my note are insufficient to make a detailed examination of it worth while.

A curious belief, which may be mentioned in connection with the conceptions recorded above, is that if a person has shortly before been bitten by a rat he should not attend a funeral, lest poisoning result from the bite, and he die [Yokohama].

W. L. HILDBURGH.

REVIEWS.

India: Archæology.

Brown.

Catalogue of Prehistoric Antiquities in the Indian Museum. By J. Coggin

Brown.

55

This work deals with the prehistoric antiquities in the Calcutta Museum, about half the volume referring to specimens of characteristic palæolithic form, nearly the whole of the remainder being devoted to specimens of neolithic age, the number of early copper and silver antiquities catalogued being comparatively small. A good deal of doubt has been expressed whether Indian palæoliths, for the most part fashioned of quartzite, though of the same forms as the older drift implements of Europe, are contemporaneous with the latter. This doubt would seem to have been set at rest with regard to one specimen, which is, however, typical in form and technique of a whole series. This implement, which, to judge from the illustration, is a well-worked ovate of St. Acheul type, and comes from the Nerbudda Valley, furnishes "one of the few, but no less decisive pieces of evidence of human existence in late geological times, coeval with the presence of a vertebrate fauna long extinct." It is of Vindhyan sandstone, and was found lying flat and two-thirds buried, in a cliff face under some three feet of the stiff, reddish, mottled, unstratified clay which underlies about twenty feet of gravel containing bones of extinct mammals.

Another specimen of seemingly palæolithic age is an "agate chip" found *in situ* in the bone-bearing beds of the upper Godavari Valley. It is not of characteristic older palæolithic form, and the small size of the reproduction makes it difficult to discuss its affinities; moreover, there seems to be a discrepancy between its size as given in

* Inouye, *op. cit.*, pp. 247, 248.

the body of the work and that of the reproduction, but it is not very unlike certain of the 'longer, coarser "flakes" from the London gravels and the Egyptian desert.

The neolithic specimens include some good examples from Burmah of the "shouldered" or so-called "spade" celt of Indo-China.

The facility with which the volume can be used, and, therefore, its value, would have been greatly increased if the serial number of each specimen had been given in the lists facing the plates.

C. G. S.

Psychical Research.

Coover.

Experiments in Psychical Research. By John Edgar Coover. Pp. xxiv, 641; \$3.50 (paper). Stanford University, California.

56

A most interesting and instructive record of work, undertaken chiefly to test, under laboratory conditions, the reality of telepathy, or thought-transference, and (as a secondary issue) clairvoyance, and carried out during four years by thousands of experiments, with a sound understanding of experimental and statistical methods.

Reducing the problem to simple cases, where results may be exactly estimated, Professor Coover began with the guessing of Lotto-Block numbers, the two-place numbers from ten to ninety. The student whose powers were to be tried (or re-agent) sat in an arm-chair, composed his mind, responded to the challenge to guess a number, and then recorded the degree of certainty with which he judged it to be right, the kind of impression (visual, auditory, kinæsthetic) upon which he based his answer, and so forth. The experimenter sat facing the re-agent's back, at a distance varying from 1 to 10 metres. He drew a Lotto-Block from a bag, and if the numbered side came up prepared to hold it in some kind of vivid imagery, with a determined will to communicate it to the re-agent, signalled the beginning of the experiment, and, after 15 seconds, closed it. If the blank side of the block came up, the experimenter did not look at the number, and refrained from thinking of numbers, but signalled the beginning of the experiment as before, and, after 15 seconds, the conclusion of it. As the re-agent never knew whether the experimenter had a number in his mind or not, a series of control experiments, determined by chance (the way the block came out of the bag), was thus carried on along with the positive ones. The results of a thousand experiments show that the successful guesses were not beyond the probability of chance, and that there was no significant difference between the percentages of right guesses when the number was known to the experimenter (whose mind was to be read) and when it was not.

Next came ten thousand experiments on the guessing of 'playing cards (ace to ten), under conditions of control and of varying the distance between experimenter and re-agent, etc., similar to those described above. Right guesses were counted for the whole card, the colour, the number, the suit. About 100 students of psychology, most of them believers in telepathy, acted as re-agents. The result was that "various statistical treatments of the data fail to reveal any cause beyond chance operating for right cases," and that "no trace of an objective thought-transference is found." One thousand experiments under the same conditions were made with psychics, or "persons reputed to be 'sensitive' to telepathic or clairvoyant impressions"; but their guesses showed "no advantage over normal re-agents as claimants for the capacities of telepathy or clairvoyance."

A third series of experiments upon "the sense of being stared at," and the common belief that if you stare at a man's back he will turn round, furnished less opportunity of obtaining precise results. Such as they were, the results were negative. Re-agents did not know when they were stared at, and thought they were, when they were not. But believers in this sort of telepathy will probably object that the

time allowed for the experiment (15 to 20 seconds) was not enough; for is not the ground of the illusion merely this, that if you stare at a man's back *long enough* he will turn round?

Experiments upon subliminal impressions—that is, impressions that fall below the customary limen of perception, though not below the absolute limen of consciousness—show that such impressions have a positive influence upon judgment, and “it must be regarded as more than probable that, as some investigators and critics have suspected, this sort of perception has played a rôle in the evidence for telepathy gathered from thought-transference experimentation and from the séance room.”

Instructive chapters follow upon “Mental Habit,” on the “Application of Mental Habit to Thought-Transference,” upon “Inductive Probability” and the “Infinitesimal Probability.” In this chapter Professor Coover gives examples of some extraordinary occurrences not supposed to have any connection with the spiritual or supernatural, which are at least as astonishing as any to which this connection has been ascribed as an explanation of them; and he observes that “within our field of observation there is an indefinite number of series [of events] of indefinite length in constant process; the infinitesimally probable events in the aggregate of these various series may be expected to occur frequently. The improbable is to be expected in its proper proportion.”

When, at a séance, you hear words spoken and messages given, how much of your perception is objective? Many thousands of experiments upon “Sound Assimilation” show that auditory sensation excited by a word or sentence may be very imperfect, and yet sense may be made of it, whether right or wrong; that “a large part of the perception of English words is contributed by the mind, and that suggestion is a very potent determinant of the language heard.” Much as happens in visual perception.

Part V, by Professor L. J. Martin, gives an account of “Local Ghosts” and an “Experimental Study of the Subconscious.” There are appendices on “Grounds for Scientific Caution,” etc. One can hardly speak too highly of the ingenuity, caution, or industry displayed in this work. CARVETH READ.

ANTHROPOLOGICAL NOTE.

Magic.

The following is an additional example of the belief that the blood of children can be used to work magic. Commenting on the large number of **57** Spanish Jews in the Balkan peninsula, my Catholic Albanian guide asked me if I knew the reason why they were expelled from Spain. On my replying in the negative, he said that the Jews of Spain had become very ambitious and wished to destroy all the Christians and have the land for themselves. A Jewish magician therefore approached a very poor Christian beggar woman who had two very beautiful children and offered her riches for life, if she would kill one of them and sell him the heart. The woman consented, but she cheated the Jew and killed a small pig and at night took the heart to him. Next day every pig in Spain suddenly rushed into the sea and was drowned. The poor woman then gave information. It was at once obvious that had she fulfilled her promise and given the child's heart all the Christians would have rushed into the sea. The population thereupon arose and expelled the Jews. This, said my informant, was a well known historic fact—pigs and all. He firmly believed in it himself.

M. EDITH DURHAM.

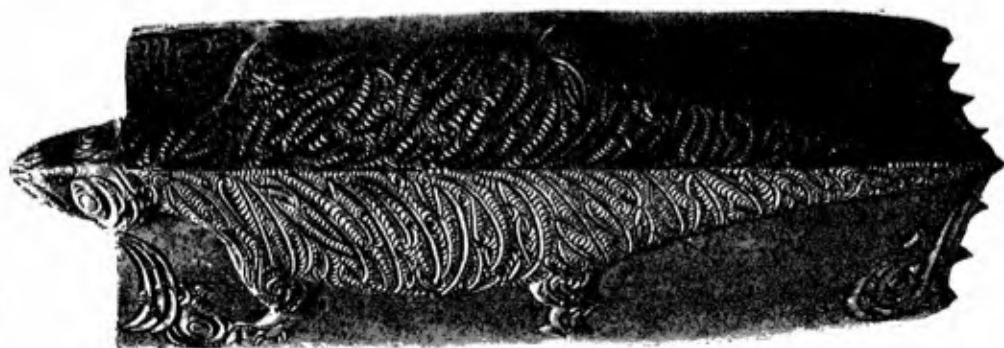


FIG. 1.—LENGTH, 4 FT.

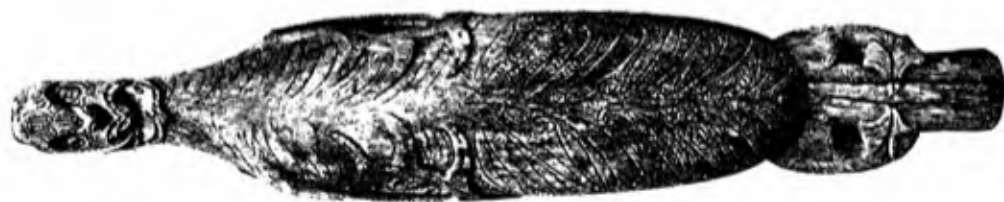


FIG. 2.—FRONT VIEW.
LENGTH, 6 FT.



FIG. 2A.—SIDE VIEW.
SHOWING LID AND PERFORATED
CARVING IN ANGLE OF ARM.
LENGTH, 6 FT.



FIG. 3.—LENGTH, 4 FT. 8 IN.



FIG. 4.—LENGTH, 5 FT. 2 IN.

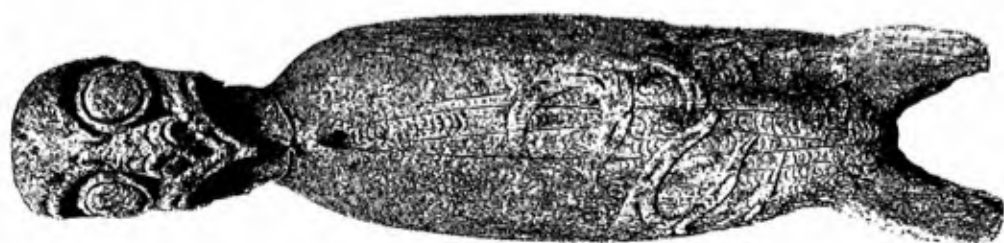


FIG. 5.—LENGTH, 3 FT. 1½ IN.



FIG. 6.—LENGTH, 3 FT. 6½ IN.



FIG. 8.

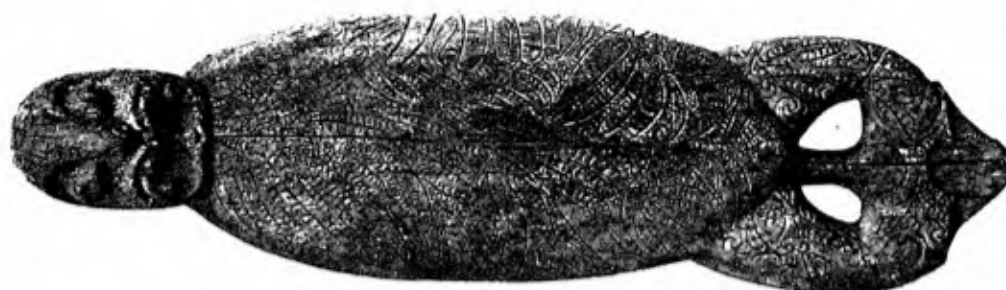


FIG. 9.—LENGTH, 4 FT. 2 IN.

MAORI BURIAL-CHESTS—continued.

ORIGINAL ARTICLES.

Ethnography.

With Plate G.

Rivers.

Maori Burial-Chests. By W. H. R. Rivers, F.R.S.

58

When in Auckland three years ago I suggested to Mr. Cheeseman that the unique collection of burial-chests in his museum should be brought to the notice of European anthropologists. Several of the chests had already been figured, but others had not been recorded, and these have now been figured in MAN, 1918, 49. Mr. Cheeseman also sent new photographs of the chests which had already been published, and these are now shown in Plate G.

All these chests were used in the rite of secondary burial. The bodies of the dead were placed in trees, and after a time, it might be several years, the bones of chiefs were collected and placed in one of these receptacles. Several of the chests figured in MAN, 1918, 49, could be set up in the erect position, and with one exception the chests of Plate F were also placed in this position, leaning against the back of the cave. The exception is that of the chest adorned with the representation of a lizard (Plate G, Fig. 1), which was placed across the mouth of the cave to guard it and the skeleton it contained from disturbance.

The custom of placing the dead or their bones in caves is widely spread in Oceania, but neither elsewhere in New Zealand nor in any other part of Polynesia do we know of such chests. Receptacles, often in human form, are, however, used in Melanesia, notably in the Solomon Islands, to preserve the skull or skeleton. Three of the chests figured by Mr. Cheeseman last month contained the skull only, and were set upright in the ground, in both respects agreeing with the practice of the Solomon Islands. Similarity with Melanesian culture also comes out in the nature of the chests themselves. In the many respects in which the carving departs from the usual characters of Maori art it approaches that of Melanesia.

It is noteworthy that the part of the northern island where these chests have been found is characterised by the prominence of negroid or Melanesian characters in the physical features of the inhabitants.*

The chests are of great interest in connection with the problem recently raised by Mr. Elsdon Best,† and Mr. H. D. Skinner,‡ whether the negroid element in New Zealand is derived from its earliest human inhabitants or is the result of some later migration. These chests were still being made in recent times, and if they were a survival from the funeral practices of the earliest inhabitants it seems very unlikely that they would be found only in one district of the country. Their localised occurrence supports Mr. Skinner's suggestion that the Melanesian element in New Zealand is the result of a relatively late migration.

W. H. R. RIVERS.

Ethnography.

Skinner.

Maori Burial-Chests. By H. D. Skinner.

59

The first recorded examples are two secured by an Auckland dealer, one of which, now in the Melbourne Museum, is described as the better of the two, and is figured by Edge-Partington.§ The other is twice figured by Hamilton,|| who states that both were found "near Auckland." The next recorded are those from North Auckland, secured by the Auckland Museum, eight of which have been figured and

* A. de Quatrefages et T. Hamy: *Les crânes des races humaines (Crania Ethnica)*, Paris, 1882, p. 466; and John Scott: *Trans. New Zealand Inst.*, 1893, Vol. XXVI, p. 63.

† MAN, 1914, 37, and *Trans. New Zealand Inst.*, 1915, Vol. XLVIII.

‡ See No. 59, below.

§ J. Edge-Partington: *Ethnographic Album of the Pacific*, 3rd Series.

|| *Maori Art*, p. 153, and Fig. 3, Plate 24. Also *Colonial Museum Bulletin*, No. 1, p. 70.

described by Cheeseman,* and later by Baessler.† Of eight chests from North Auckland secured by the Dominion Museum, the most interesting example is described and figured by Hamilton.‡ The six examples from Raglan, presented to the Dominion Museum by Mr. A. H. Turnbull, are described and figured by Edge-Partington.§ Of this group the most interesting is a small specimen which Captain Gilbert Mair suggests was designed to hold a placenta. An even smaller one came into the possession of the Dominion Museum with the collection of the late Sir Walter Buller, but its provenance is unknown to the writer. Two more, from the Whangarei district and of the ordinary size, are in the private collection of Mr. W. Fels.

Thus, of thirty-one examples of which the provenance has been recorded, all come from the Provincial District of Auckland. The exact locality of two of these is not stated; twenty-three are from the region north of the general line Whangarei-Kokianga; while the remaining six are stated, on the authority of a dealer, to have been found in the sand-hills at Raglan. The present writer, after examining the condition of the timber from which the chests are made, finds it impossible to believe that these examples were actually recovered from sand-hills. It seems possible that they were secured from some tribal burial cave near the others, and that the persons from whom the dealer acquired them were unwilling that their true hiding-place should be known to their rightful owners. In any case, the distribution of the chests is very remarkable. Not a single example has been thus far recorded south of the Provincial District of Auckland. Dr. Rivers has pointed out their close relationship in function to the bone-chests of Melanesia, and it is to the same region that their decoration, and the decorative art of the whole district from which they come, is most closely allied. The closeness of this alliance is further emphasised by the cranio-metrical work of de Quatrefages and Scott. If the southern tribes of New Zealand and the inhabitants of the Chatham Islands are to be regarded as the descendants of the earliest inhabitants of New Zealand, pushed south by later arrivals, the Melanesian element in the north may be suggested as this later intrusive element. Mr. Best has pointed out that the absence among these northern people of any tradition relating to "The Fleet," which came to New Zealand from Tahiti about 1350 A.D., is evidence of a different origin from that of other tribes. The whole question is obscure, and it seems wisest to await fresh evidence before coming to any definite conclusion on it. It may be remarked, however, that the traditions which tell of a pre-Maori negroid population in New Zealand appear to be at variance with other evidence.

H. D. SKINNER.

Archæology.

Moir.

An Early Mousterian "Floor" Discovered at Ipswich. By J. Reid

60

In a paper published recently|| I referred to the discovery at Ipswich of a floor containing flint implements and flakes fashioned in the Early Mousterian manner, and associated with the bones of animals such as are known to have favoured a cold and rigorous climate. It is the purpose of this note to give a brief description of this discovery, and to figure some of the flint implements, etc. which were recovered. In the early part of 1916 the Ipswich Corporation were constructing a coal-handling plant at the Electric Power Station, Constantine Road. This work necessitated the making of an excavation about 20 feet square and 16 feet

* *Trans. New Zealand Inst.*, 1906, Vol. XXXIX, p. 451.

† *Zeitschrift für Ethnologie*, 1905, p. 971, and Plates.

‡ *Bulletin of the Dominion Museum*, No. 3, p. 110.

§ *MAN*, 1909, 18.

|| Moir, J. Reid: "On Some Human and Animal Bones . . .," *Journ. Roy. Anthr. Inst.*, Vol. XLVIII, July-December, 1917.

deep. Soon after the work was begun I received an intimation from Mr. Frank Ayton, chief engineer and manager at the power station, that the men employed in the digging were finding some animal bones, and he was kind enough to ask me to visit the excavation and to preserve any relics that might be found. As will be seen from Fig. 1, the site of the discovery

FIG. 1.



CROSS-SECTION OF RIVER GIPPING SHOWING
APPROXIMATE POSITION OF EXCAVATION.

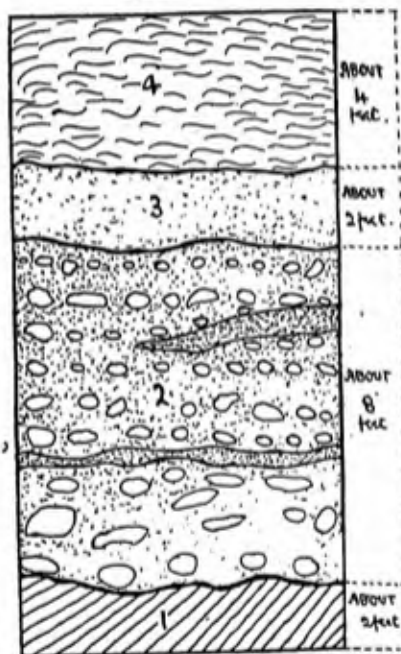
J.R.M.
1918.

under description is situated in the bottom of the Gipping Valley, the surface of the ground at the electric power station lying at a level of about 13 O.D. The digging had not proceeded very far before the hole was partly filled with water, and special arrangements had to be made to cope with it. The presence of this water made it impossible for me to see, with my own eyes, the actual strata passed through, but Mr. Ayton has kindly furnished me with the following particulars, which I have no hesitation in regarding as in every way trustworthy. Moreover, they tally in a remarkable manner with the details of a section exposed about half a mile up the Gipping Valley, and with which section I am intimately familiar. It appears, then, that the strata exposed at the electric power station are as follows (Fig. 2). I commence with the lowermost bed :—

(1) Loam (about 2 feet) containing unrolled Mousterian flint implements and flakes and numerous animal bones. (2) Stratified gravel (about 8 feet), in which, some years ago a beautiful flint blade of Solutrian workmanship was found, and containing also rolled examples of Acheulean and earlier implements. (3) Pure sand (about 2 feet). (4) Modern alluvium (about 4 feet) showing signs of having been dug into at some period.

I illustrate (Fig. 3) a typical Early Mousterian coup-de-poing or hand axe, which, it will be noticed, has one face much flatter than the other. It will be noticed, also, that while the angle A is rounded the angle B is square, and this peculiarity has been shown to be characteristic of the Early Mousterian hand axes.* Fig. 4 illustrates a Mousterian point made from a thickish flake of flint. The flakes recovered are large, and in each case exhibit a faceted striking platform, and the truncated remains of other flake-areas on the upper face, showing that these flakes were struck from a "prepared" block of flint such as was in vogue in Mousterian times at Baker's Hole, in the Thames Valley, and elsewhere.† The

FIG. 2.

J.R.M.
1918

DIAGRAMMATIC DRAWING OF
SECTION.

1. Loam with Mousterian flint implements &c.
2. Stratified gravel with Solutrian blade and rolled Acheulean and earlier implements.
3. Sand.
4. Modern alluvium.

* Smith, Reginald A. : *Archæologia*, Vol. LXVII.

† Smith, Reginald A. : *Archæologia*, Vol. LXII.

flint implements and flakes are quite unrolled and unpatinated, and it is necessary to conclude that the loam shown in Fig. 2 contains an actual working-site of Early Mousterian times. The bones were identified by Professor Arthur Keith, F.R.S., and are referable to the following animals: Elephant (?) reindeer, ox (*Bos primigenius*), and goose (?). The bones of the reindeer were the most numerous, and many showed splitting for the extraction of marrow. These remains, like the flint implements and flakes, are quite unabraded, and show a remarkable condition of preservation.

This discovery appears to demonstrate clearly that in Early Mousterian times the River Gipping had eroded its valley to a depth of 14 feet or more below

the present surface of the alluvium, and that since the occupation of the ancient floor by man, gravel and other deposits have been laid down over it. It is somewhat difficult at present to correlate the Early Mousterian floor under description with the Upper Mousterian and Aurignacian floors discovered in the 'brickfield' of Messrs. Bolton & Co., Henley Road, Ipswich,* but further research may make such correlation possible. It may be remembered that in the hill-wash overlying the Aurignacian floor mentioned above, two implements of Early Solutrian type were found.

FIG. 3

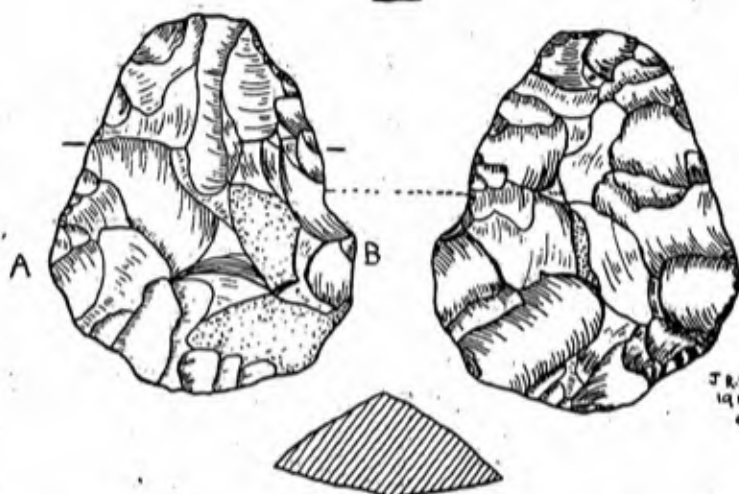
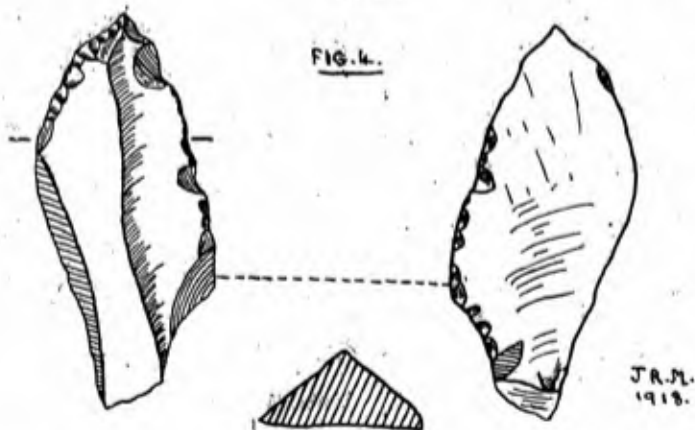


FIG. 4.



It is thus possible that this hill-wash may be the equivalent on the high ground, of the valley gravel shown in Fig. 2, which, as has been stated, contained a flint blade of typical Solutrian workmanship.†

The implements and bones described in this note will, it is hoped, soon be on exhibit in the Museum, High Street, Ipswich.

J. REID MOIR.

* Moir, J. Reid: "On Some Human and Animal Bones . . ." *Journ. Roy. Anthr. Inst.*, Vol. XLVII, July-December, 1917.

† Hancox, E. R. H.: *Proc. Suff. Arch. and Nat. Hist.*, Vol. XL, Part 1 and Part 2, Fig. 4.

Great Britain: Witchcraft.

Murray.

Witches' Familiars in England. By M. A. Murray.

61

The usual conception of a witch's familiar is a small animal or bird, nourished by sucking the witch's blood, carrying out her wicked behests, and animated by an evil spirit.

This form of familiar is so strictly limited to England that Hutchinson is able to say, "I meet with little mention of *Imps* in any Country but ours, where the Law makes the feeding, suckling or rewarding of them to be Felony."* They are referred to by Forbes, "To some he [the Devil] gives certain Spirits or Imps to correspond with, and serve them as their Familiars, known to them by some odd Names, to which they answer when called. These Imps are said to be kept in Pots or other Vessels."† Though the Scotch law made these provisions, the Scotch trials show no record of such familiars, but the description applies accurately to the imps of the English witches. The eastern side of the country, particularly the counties of Essex, Suffolk, Huntingdonshire, and Rutland are the places in which this kind of familiar is most common; it is also recorded in Lancashire, Somerset, Devon, and Northamptonshire.

These familiars were small animals, cats, ferrets, mice, moles, toads, and occasionally dogs. They were always named; were kept in pots or boxes lined with sheep's wool; were fed on milk, bread, raw meat and the witch's blood; and were used for working magic. When the religion was at its height, the imp was probably used for good as well as bad purposes; but as the cult was not recorded until decadent, we find the familiars used only for evil. The witch might have more than one familiar; she then used one for working magic on human beings, the others for bewitching cattle, horses, or inanimate objects.

The imp being regarded as a substitute of the Devil, it is spoken of indifferently either as "the Devil" or by its proper title of "familiar." Hellen Clark, an Essex witch tried in 1645, "confesseth that about six weeks since, the Devill appeared to her in her house in the likenesse of a white dog, and that she calleth that familiar Elimanzer. . . . Rebecca Weste told this informant that the Devill appeared to them in the shape of a dogge; afterward in the shape of two kitlyns; then in the shape of two dogges; and that the said familiars did doe homage in the first place to the said Elizabeth Clarke, and skipped up into her lap, and kissed her."‡

The witch-trials of Essex extend over more than a century, and contain in detail practically all the facts. The information from trials in other parts of the country is useful for supplementing and for clearing up a few obscure points.

The earliest of the Essex trials is that of the witches of Hatfield Peveril, in 1556. The accused were Elizabeth Francis, Mother Waterhouse, and her daughter, Joan Waterhouse. Elizabeth Francis "learned this arte of witchcraft at the age of xii yeeeres of hyr grandmother whose nam mother Eue. Item when shee taughte it her, she counselled her to renounce God and his work and to geue of her bloudde to Sathan (as she termed it) whyche she deliuered her in the lykenesse of a whyte spotted Catte, and taughte her to feede the sayde Catte with breade and mylke, and she dyd so, also she taughte her to cal it by the name of Sathan and to kepe it in a basket. . . . Item, that euery tyme that he did any thyng for her, she saide that he required a drop of bloude, which she gaue him by prying herselfe, some time in one place and then in an other, and where she pricked herselfe there remaind a red spot. . . . When she had kept this Cat by the

* Hutchinson: *Historical Essay*, p. 77.

† Forbes: *Institutes of the Law of Scotland*, II, pp. 32-4.

‡ Howell: *State Trials*, IV, 839, 841.

"space of xv or xvi yeare, and as some saye (though vntruly) beinge wery of it, she came to one mother Waterhouse her neyghbour, she brought her this cat in her apron and taught her as she was instructed before by her grandmother Eue, telling her that she must cal him Sathan and geue him of her bloude and bread and mylke as before." Mother Waterhouse appears to have followed the instructions faithfully; the most interesting part of her evidence is the transference of the magical power of one animal to another, and the charm by which the transference was effected: "She receyved this cat of this Frances wyfe in the order as is before said . . . She (to trye him what he coulde do) wyld him to kyll a hog of her owne, which he dyd, and she gaue him for his labour a chicken, which he fyrste required of her and a drop of her blod. And thys she gaue him at all times when he dyd anythynge for her, by pricking her hand or face and puttinge the bloud to his mouth whyche he sucked, and forthwith wold lye downe in hys pot againe, wherein she kept him . . . Also she said that when she wold wyl him to do any thinge for her, she wolde say her Pater noster in latyn. Item, this Mother Waterhouse confessed that shee fyrst turned this Cat into a tode by this meanes, she kept the cat a great while in woll in a pot, and at length being moved by povertie to occupie the woll, she praied in the name of the father and of the son and of the holy ghost that it would turne into a tode, and forthwith it was turned into a tode, and so kept it in the pot without woll."

The second set of trials was of the witches of St. Osyth in 1582. Here again the evidence goes to prove that the familiars were small animals kept and fed in a special way. Thomas Rabbet "saith, that his said mother Ursley Kempe alias Grey hath foure severall spirites, the one called Tyffin, the other Titty, the third Pigine, and the fourth Iacke; and being asked of what colours they were, saith, that Tytney is like a little grey Cat, Tyffin is like a white lamb, Pygine is black like a Toad, and Iacke is blacke like a Cat. And hee saith, he hath seen his mother at times to giue them beere to drinke, and of a white Lofe or Cake to eate, and saith that in the night time the said spirites will come to his mother, and sucke blood of her upon her armes and other places of her body." Ursley Kemp gave evidence against mother Bennet and Ales Hunt: "About a quarter of a yeere past, she went vnto mother Bennets house for a messe of milke, the which she had promised her. But at her comming this examine saith that shee knocked at her dore, and no bodie made her any answere, whereupon shee went to her chamber window and looked in therat, saying, ho, ho, mother Bennet are you at home: And casting her eyes aside, shee saw a spirit lift up a clothe, lying over a pot, looking much like a Ferret. And it beeing asked of this examine why the spirit did looke vpon her, she said it was hungrie. . . . About the foureteene or fiftene day of Januarie last, shee went to the house of William Hunt to see howe his wife did, and shee beeing from home, shee called at her chamber window and looked in, and then espied a spirite to looke out of a potcharde from under a clothe, the nose thereof beeing browne like vnto a Ferret." Mother Bennet herself confessed that "about two yeeres past there came vnto her two spirits, one called *Suckin*, being blacke like a Dogge, the other called *Lierd*, beeing red like a Lion, *Suckin* this examine saith is a hee, and the other a shee. . . . Many times they drinke of her milke bowle. And when, and as often as they did drinke of the mylke: this Examine saith they went into the said earthen pot, and lay in the woll." In the evidence of Ales Hunt and her step-daughter Febey the recorder has made a curious mistake. Ales confessed to having two spirits, "like unto little Coltes"; Febey stated, "yt shee hath seen her mother to haue two litle thinges like

* *Philobiblon Society*, VIII: "Examination and Confession of certain Witches at Chelmsford," pp. 24-29, 29-32. Mother Waterhouse was executed.

"horses, the one white, the other blacke, the which shee kept in a litle lowe earthen pot with woll, colour white and blacke; and that they stode in her chamber by her bed side, and saith that she hath seene her mother feede them with milke." From the size of the animals in question and judging by similar animals employed as familiars, the word used was probably "cote," a provincial pronunciation of "cat"; but the recorder thinking it was "colt" elaborated it further into "horses."

The third set of trials in Essex took place in 1645; these are the best known, as it was here that Matthew Hopkins obtained notoriety as a witch-finder. The confessions of the women show the continuation of the customs of their predecessors, which were also known both before and after in other parts of the country: "Rose Hallybread saith, that about fifteen or sixteen years since, there was an imp brought to her house by one Goodwife Hagtree, which imp this examinant entertained, fed it with oatmeale, and suckled it on her body, for the space of a yeer and a half, or thereabouts, and then lost it. . . . Susan Cock saith, that about three or four yeeres since, one Margery Stokes, the examinant's mother, lying upon her death bed, and this examinant coming to visit her, shee said Margery desired this examinant privately to give entertainment to two of her imps. One of the said imps was like a mouse, and the other was of a yellow colour about the bigness of a cat . . . and the same night her said mother dyed, the said two imps came to her accordingly, and suckled on her body. . . . Anne Cooper hath had three imps suckled on the lower parts of her body. The said Anne offered to give unto her daughter Sarah Cooper an impe in the likeness of a gray kite [? cat] to suck on the said Sarah."

The Huntingdonshire witches, tried in 1646, had familiars of the same kind as the Essex witches. Elizabeth Weed confessed that "there did appeare unto her three Spirits, one in the likeness of a young man or boy, and the other two of two Puppies, the one white and the other black." Frances Moore "saith that about eight yeares since she received a little blacke puppy from one *Margaret Simson* of great *Catworth*, which dog the said *Margaret* had in bed with her, and took it thence when she gave it to this Examinee. The Examinee further saith, that the said *Margaret* told her, that she must keep that dogge all her life time; and if she cursed any Cattell, and set the same dog upon them, they should presently dye, and the said *Margaret* told her that she named it already, his name was *Pretty*. And the said Examinee further saith, that about the same time goodwife *Weed* gave her a white Cat, telling her, that if she would deny God, and affirme the same by her bloud, then whomsoever she cursed and sent that Cat unto, they should dye shortly after. Whereupon the said Examinee saith that she did deny God, and in affirmation thereof shee pricked her finger with a thorne, whence issued blood, which the Cat presently licked, and the said goodwife *Weed* named the cat *Tissy*. And she further saith, that she killed the said Dog and Cat about a yeere since." Jane Wallis said that, when "Blackman" came to her, "he told her he would send one Grissell and Greedigut to her, that shall do anything for her. And after Blackman was departed from her, within three or 4 dayes, Grissell and Greedigut came to her in the shapes of dogges with great brisles of hogges hair upon their backs."†

The evidence, even in the few extracts given above, shows that the sucking familiar is common in these later trials, it is, however, rare in the sixteenth century. It is therefore possible that it was a late development, deriving from the witches' ritual of pricking themselves and then letting the animal lick off the resulting drops

* Howell, IV, 852, 853, 845.

† Davenport: *Witches of Huntingdon*, pp. 1, 5, 12.

of blood. The facts are, however, so definitely stated, that there seems little doubt that in the seventeenth century the English witches actually trained the animals to suck some portion of their (the witches') bodies. One of the physical characters of witches was the supernumerary nipple. This was in itself considered a proof that the person was a witch; the nipple, or "teat," as it is usually called, being given to the witches by the Devil as his mark. As the supernumerary nipple secretes milk it was very possibly used for the purpose of suckling the familiar.

The evidence of the Lancashire witch, Margaret Johnson, in 1633, shows that both methods were in use among the witches at that time. She "sayth, yt such witches as have sharp bones given them by the devill to pricke them, have no pappes or dugges whereon their devil may sucke; but their devill receiveth bloud from the place, pricked with the bone; and they are more grand witches than any yt have marks. Shee also saith, yt ye devill (after he begins to sucke) will make a pappe or dugge in a short tyme, and the matter which hee sucks is blood. Shee alsoe saith, yt when her devill did come to sucke her pappe, hee usually came to her in ye liknes of a cat, sometymes of one colour, and sometymes on (*sic*) an other."

The remarkable fact about the sucking familiar is its limited distribution, both geographically and chronologically. It does not occur in any other country than England, and even there it is not found further north than Lancashire. It would seem, from the evidence, that the custom arose in, or was introduced into, the eastern counties, and spread thence across the country. There is, however, nothing to show from what part of Europe such a custom could have been brought; neither the French nor Belgian trials give any indication of familiars used in this way. It is impossible to believe that the custom arose suddenly all over England in the seventeenth century, yet the earlier trials, though very detailed, never refer to it. Even to regard it as a development of the original pricking by the witch of her own person, as I have suggested above, does not explain the apparently sudden adoption of the custom in the whole of England.

M. A. MURRAY.

India.

Panikkar.

Religion and Magic among the Nāyars. By K. M. Panikkar.

62

The religious beliefs of the Nāyars show an extraordinary mixture of Hindu and Dravidian cults. All the temples are dedicated to Krishna Siva or Kariyayani. There are also a few *kavus* or groves for the worship of the lesser Hindu deities. But the important point with regard to this is that the Nāyars are as a whole a people almost without a religion,† and they use Hindu temples for practices which receive no sanction even in the generous vagueness of that creed. The religious conceptions of Hinduism have but the slightest influence on the Nāyar community as a whole. It is quite true that there are a good many devout Hindus among the Nāyars, but the very fact that the distinction of Saiva-ism Sakti-ism, Vaishnavism, &c., have not reached them is sufficient proof that though they have been Hinduised in form, and have belonged to the Hindu fold, their primitive beliefs have been survived to a great extent.

Nothing shows so much the extreme persistence of primitive culture, even in the face of higher civilising agencies, than the wide and almost universal acceptance of spirit-worship, and the almost entire absence of religious life, among the Nāyars, after at least twenty centuries of contact with Hinduism. Their contact with religions has not been limited indeed to Hinduism. The Jews flying after the destruction of their Temple found refuge among the Nāyars, and have lived in their

* Whitaker: *History of Whalley*, p. 216.

† See the discussion following.

midst for nigh 2,000 years. The apostle St. Thomas is supposed to have planted a community of Syrian Christians among them, who also have lived side by side with the Nāyars as their social inferiors in Malabar for almost the same length of time. Ever since Mohamed founded his religion in Arabia, Allah has found faithful worshippers in Malabar who moved with equal status among the Nāyar population. The beautiful creed of Gautamā Buddha had for long its devout votaries in the land of the Nāyars, and traces of Buddhist monasteries and survivals of Buddhist worship still abound. The militant Romanism of the Holy Inquisition, and the no less militant Protestantism of the Dutch, had their chance in turn for at least a century and a half. Yet with, all the great religions of the world to choose between during the last 2,000 years, it is nothing short of marvellous to see the Nāyars—who have, it must be remembered, assimilated a very great deal of the material and intellectual culture of their neighbours, and more than that, excelled them in literature and music—still maintain with undiminished vigour their spirit-worship, black magic, and demoniacal ceremonies, and be devoid of almost every element of true religious life.

We may be accused of the "narrow use of a wide word," in the phraseology of Tylor, when we deny that the Nāyars have any religion apart from a veneer of Hindu influence. Their beliefs are mainly magical. Here, of course, I am treading on very dangerous grounds, dangerous even to the initiated, but fatal to the novice. In this essay I have taken the distinction between religion and magic as being primarily a question of method rather than of intention or possible effect. The orthodox French opinion that the difference between magic and religion is that the latter is social while the former is anti-social, has been proved by Mr. E. S. Hartland and Dr. Marett to be wholly untenable; while the contention of Dr. Marett himself,* that the difference between magic and religion lies in the attitude of society towards them, seems also to be inadequate.

Among the Nāyars there is an implicit distinction between practices to propitiate a god and those with which to bully a spirit. Bullying a spirit for purposes of social benefit I have not considered to be religion, though it is recognised by society as beneficial, because it does not possess the emotional and the psychological elements which Dr. Marett himself has with great truth insisted on as the essence of religion.† I have called such practices magical, not only because they lack the emotional and the psychological elements of religion, but also because the fundamental presupposition in such performances is the power wielded by the magician, the *orenda* which he has acquired, over the ghosts.

This is very clear from the Nāyar ideas of *Thēvar* and *Pisachu*. *Thēvar* can be propitiated, but never conquered; while a *pisachu* (or ghost), though superior to man in power, intelligence, and will to do harm, can be rendered harmless and kept under control by magical practices. The former conception is clearly Hindu, and relates only to Hindu gods. The spiritual ideas of the Nāyars themselves seem to be confined to ghosts, spirits, and to a comic elf called Kutti-Chāttan.

Before we proceed to consider them, the position of the magician in the Nāyar community has to be made clear. It is generally taken for granted by anthropological writers that wherever social life is regulated by magical practices the Shaman comes to be held in reverence. It is very interesting, therefore, to notice that the Nāyars never accepted the superiority of the magician, and never accorded him any privilege. The magico-medicine man is, on the other hand, considered to be a sort of servant-in-attendance on a nobleman's family, something like a family doctor. The explanation that it is due to the warlike character of the Nāyars is

* *Anthropology*, p. 210.

† *Threshold of Religion, Essays, Pre-animistic Religion, the Birth of Humility.*

clearly inapplicable, as the magician attained kingly powers among the Masai, for example, whose society is also organised for purposes of war. The fact that the Kaniyan (or the magico-medicine-man) is not only not venerated, but actually considered an inferior, may be more due to the effect of caste-system, which places Nāyars high among the social scale.

The Kaniyan is, of course, recognised as a necessary person. He gets from all the houses of the village settled remuneration, mostly in cocoa-nuts. He is not otherwise paid for ordinary consultation, and he is bound to attend to every case in the village without fail. For special exertions of his magical powers he has special payments settled by village custom. He has power, both inherited and acquired, to cast off spirits, to perform preventive magic, and keep general control over ghosts.

There are supposed to be three kinds of spirits, *Prêtam*, *Bhutam*, and *Pisachu*. *Prêtam* is the spirit of a dead man. The ghosts of men who died in the ordinary course of events are not really *prêtams*, because they do not wander about to overpower people and drink their blood. It is generally the ghosts of men who died as a result of foul play, or by accidents such as drowning, or by terrible diseases such as small-pox and cholera, that wander about at nights. *Bhutam* is seen generally in marshy districts, and does not always hurt people unless they go very near him. *Pisachu* is a general spirit of the air, causing such diseases as small-pox. All these spirits can be seen. At night their mouth is full of fire of different colours, but it throws out no rays. That it throws out no rays is important, because therein is supposed to lie the distinction between an ordinary light and the fire in the mouth of a spirit.

The *prêtam* is supposed to hover round its burial place or the place of its accident. Everyone is warned off such a place at night time. The hours during which these *prêtams* appear are between 9 o'clock in the evening and 3 in the morning. It must be noticed here that the *prêtam* of a "black-magician," as distinct from a social magician like the Kaniyan, has more power to do mischief; it has more *orenda*, so to say. The man who practises black magic invariably dies a violent death and his *prêtam* hovers round the scene of his former activities.

"Man dreads above everything else," says S. Reinach,* "illness and death, "punishments inflicted by the angry spirits with which his imagination peoples this "world." This is absolutely true with regard to the Nāyars. Disease is generally believed either to be the outcome of offending a god or due to the magic performance of interested relations. Preventive sacrifice is very common, and every year all respectable Nāyar families perform some sort of propitiation ceremonies in the village temple. If a whole village is ravaged by some epidemic, the villagers inquire into the matter through the astrologer, and if he finds, as he usually does, that it is due to the wrath of the village god or goddess, ceremonies of various kinds are at once undertaken, and goats are offered as sacrifice, and sometimes a *Desavalathu*, a procession of the people with images around the village, is performed.

But such occurrences are rare. Only epidemics are put down to the wrath of offended gods. Other diseases, as well as misfortunes, are put down to the influence of *prêtams*, bribed into action by jealous or covetous relatives. When any great misfortune, such as a succession of deaths, happens in a family, the first thing that is done is to consult the astrologer, who is sure that a ghost is working it under the influence of magic. His prescription is, of course, counter-magic to be performed by himself. An offence to a god can easily be rectified if one does some elementary sacrifices, but the performance of counter-magic is neither so inexpensive nor so easy. First of all one has to get rid of the evil already done. For that elaborate

* *Cults, Myths and Religions*, p. 37.

ceremonies may be necessary. Secondly, ceremonies to keep one immune from future attacks are essential. If it is any woman who is possessed of the devil—and it is women who generally suffer from these things—an expensive and elaborate devil dance called Kolam-Thullal has to be performed. For this the village has to be informed, and each family in the village is supposed to contribute something in kind to the expenses and take its share in the work. The ceremony is as follows.

Preparations for the dance must begin a good many days beforehand. The Kaniyan of the village, with twelve others of his people, come to the house where the ceremony is to be performed, and each of them puts on a mask made for the occasion and paints himself in such a way as to look really terrible. The mask of each has a different expression. At about 8 o'clock in the night the girl (or girls) possessed of the devil is brought in front of the house, where are gathered all the people of the village. The whole place is illuminated with big lamps, and the girl sits alone, sometimes supported by her mother. Then one by one the masked magicians come before her and execute most frightening dances to the accompaniment of terrifying music. In dancing they make various gestures, possibly with a view to mesmeric effect, and throw various sorts of powder, and "*rudhiram*," prepared to look very much like blood, is brought very much into prominence. Dancer succeeds dancer, each more terrible looking than his predecessor, and the poor girl loses control of herself and falls into a sort of hysteria, in which the devil in her confesses where it came from and who prompted it, &c. In that case the dance is supposed to have been successful, and the devil is supposed to have been cast out.

This Kolan Thullal is performed on various occasions. The only time I have witnessed it was in 1913 when passing through a village situated in the very heart of the country. The "subject" on that occasion was a child-mother of fourteen, and the reason for the performance given by her brother, when asked by me, was that the girl had fainted four or five times during the month "without any cause," and that they had found out through the astrologer that her husband's relations had been trying to cause trouble by evil magic.

A milder and less expensive form of the same dance is Vēlan Thullal. In this only one man dances, with almost the same paraphernalia as the Kaniyans have for Kolam Thullal. This variety, however, is generally used only to cure children.

Such performances are only for the ghosts of dead men who have entered into girls or children. But if Kutti-Chāttan tries to do harm, these practices are of no avail. Kutti-Chāttan (sometimes merely Chāttan. Kutti means boy, a term of endearment; Chāttan is supposed to be a corrupted form of satan), is in no sense a god. He is something like Puck, much inclined to mischief. He is supposed to be a dwarf, though he can assume any other form, or remain invisible, as he chooses. He never goes out of his way to harm anyone, though if anybody injures him once, Kutti-Chāttan never forgives, and keeps on troubling him for life. His favourite method of annoying anybody is by throwing stones at the house or dropping unclean things in the food. He may do so without interruption, which would render life almost impossible. He is supposed to have no fingers, and therefore his vices can be thwarted by people who know it. For example, he cannot pick up things if kept in a place high above his reach, unless, of course, there is something near by on which he could climb. He cannot untie a knot, as he does not possess fingers, though he can open the strongest lock. What rich people do to keep their money out of his reach is to tie a knot on the purse and keep it locked in a safe, the latter precaution being necessary against human hands that possess fingers.

Kutti-Chättan can, of course, be tamed by magicians, and bribed to do whatever his patrons like. There is a story that a Brahmin landlord, who was also a magician, tamed a Kutti-Chättan and used him for the purpose of keeping a watch on his things. A Christian tenant of his who had gone to pay the rent, not knowing the existence of the invisible and mysterious detective, stole certain things and took them home with him. But lo! Kutti-Chättan had followed him, and the man was found dead next morning, and the stolen things were in their place. Such is the power of Kutti-Chättan, the household elf of Malabar.

Whether the practices here narrated and the belief in the existence of a "naughty elf" amount to religion depends very much upon the definition we give to it. Though they are distinctly social and possess social sanction, I do not think it can be called religion, because there is a fundamental difference in the emotional and psychic aspects of religious experience and practice and such social beliefs and customs as I have described here.

But side by side with this there also exists "black magic"—sinister, selfish, and anti-social. It is fast disappearing, more as a result of economic pressure than because of any growing disbelief in it. A young man has no time now to devote himself entirely to sacrificing goats and birds all night and chanting formulæ so that he might become possessed of magical power. Those young men who have devoted themselves to such practices are, however, looked upon with great fear. The community does not like such practices, and though these magicians may excite fear, they are also aware of the general belief that they will some day come to a disastrous end.

Their practices are carried on in secret, and nobody knows what they do except those initiated. Their assistance is procured only by people who want to do harm to others, or satisfy ignoble desires. A man often gets the help of a magician of this sort to perform his "art," so that an enemy of his who has gone on a pilgrimage may not return. They are avoided by all decent people, and society in general, though it fears their "art," considers them charlatans.

There are many minor superstitions that can be only briefly noticed here.

The Evil Eye.—The magical effect of the evil eye is a matter of very serious concern among Nāyar women. I remember being taken to task for telling a woman how healthy her boy looked, and must add that I felt as if I had been convicted of a heinous crime when, four or five days later, I was told that the child was ill. The entire feminine opinion of the village was convinced that the child was suffering from my evil eye, and a good many *mantrams*, or magical formulæ, were said over it before the child was well again. With this idea of evil eye is bound up what is known as *kari-nakku*, or black tongue. When a man with *kari-nakku* utters anything it has effect at once. When the evil eye and *kari-nakku* are combined it has "much *orenda*," as an Anglokin would say. If your newly built house is looked upon with an evil eye, and some good expression used by such a man about it, a lightning might set fire to it and destroy it the same night. If your mango tree is full of fruit this year, and a man with an evil eye and *kari-nakku* looks at it and says, "How fortunate," it might happen that for years to come it would bear no more fruit. If an envious woman, aroused by the green-eyed monster of jealousy remarks how pretty a girl is, her hair might begin to fall off, her colour might fade, and her cheeks might lose the bloom.

The fact to notice with regard to this is that you have to say complimentary things to effect evil. If you said how ugly a pretty girl is it would not affect her. You must say, out of your heart, how beautiful she is, and then it might have effect. Everything is supposed to depend on whether it is said with or without

design. If anything is said with design there would be no effect. Only when such exclamation comes out of the heart that it has the power to do evil.

Koti.—Another evil-working power is *koti*. The word literally means desire, but as an evil force it works only when a hungry person sees a rich and healthy fellow eating a good meal. If a poor man sees you eat and his mouth waters at the delicacies before you, you are sure to suffer from his *koti*, you will get stomach-ache and even dysentery. It is the particular look of the hungry man that has the evil effect. When once a man begins to suffer from another's *koti*, the only way to get over it is to eat some salt over which some *mantram*, or magical formulæ, have been repeated.

The *tabus* which are prevalent among the Nāyars are too many to be described in detail here. A few examples will show how, even in the most important matters, life is regulated in primitive society. The reason for such prohibitions, as M. Reinach points out, is to live at peace with the spirits that are supposed to surround you.

You are prohibited from eating your food at dusk. It is supposed to be an awful sin, because everything is considered to be in "a state of suspended animation" in the very short period which marks the transition from a hot tropical day to a cool and breezy night. You cannot do anything at that time except bathe or pray. There are *tabus* on what you may do on particular days of the week.

"Ezāzcha Kulichalum
Vyāzcha Kulikkarutu."

This is a typical example of the Nāyar *tabu*. Its meaning is this: "Even if you have an oil-bath on the seven days of the week don't do it on a Thursday." Though there is no reason assigned for such a prohibition there is a sufficiency of rhyme, and I must say that I never knew anyone who took an oil-bath on a Thursday except people who take it every day.

The *tabus* extend to the way in which you sleep. You are not supposed to sleep with your body north to south or west to east. The reason, I believe, is that the spirits of the dead are supposed to live in the south and in the east, and if you lie with your head facing them you might become possessed of them.

There are certain days of the lunar month on which no one may start on a journey:—

"Yama Rudrāhi Muppūram
Tṛketta iva ēzhu Naal
Vitakkil vilāyā Bhūmi
Pōkunnakil avan varā."

On the seven days presided over by the seven stars thus enumerated, if a land is sowed, no seed will sprout; if anyone starts on a journey, he will not return.

I remember a curious story connected with this. Some four months before leaving for England I had to see the Inspector of Schools in Travancore to get my leaving certificate. The only day available for me was one of these *tabu* days, and, in spite of the protests of everybody else in the house, I set out on my business. When I reached the capital of the State the Inspector of Schools had left on circuit, an hour before my arrival, to the place where I started from. I followed him there, but when I arrived he had left the place, and as a result of continuous journeying and bad food I was laid up in bed through a physical breakdown. It was true that if I had not started on that *tabu* day, but had the patience to wait for another twenty-four hours, the Inspector of Schools would have come to the town where I was living; it was also true that I came back very ill. Everyone, therefore, took it for granted that all this ill luck was due to my starting on a bad day. Many are the stories that are told of people suffering great misfortunes due to starting

on these bad days, and there is, as M. Reinach would say, "a vast oral tradition" of leading cases" connected with it. I daresay my case will go down as a most authentic one, as the facts are undoubtedly true; only the explanation is doubtful.

Tabus like this can be mentioned without end, but it is useless to do so, as they all seem to have the same "rationale"; that is, you will break your peace with the world of demons and ghosts that surround you, and bring down upon yourself their wrath, if you break any one of these rules. *Tabu* among the Nāyars is essentially an arrangement to keep the ghosts and spirits pacified; for it is clear to them from the tested experience of past ages that to break any of these rules is to challenge those who have power to do them great harm.

In whatever is said here, it should be understood that I have tried to eliminate from the Nāyar beliefs those elements which are indubitably Hindu. As I have pointed out at the start, there are a good many devout Hindus among the Nāyars, but it is an interesting fact that the practices and beliefs above described are prevalent among them also. The more one looks into these matters, the more one becomes clear that in the unorganised and uneducated human mind, be it "civilised" or be it primitive, there is a horizontal stratification of the most contradictory ideas, which lie absolutely undisturbed in the ordinary course of life. In the mind of the ordinary man whose *forte* is not clear thinking, a great deal of intermingling of such ideas might take place. It is no uncommon sight to see a thoroughly Hinduised Nāyar who talks about Absolutism and Illusion, and believes in them, paying a Kaniyan to get the devil out of his little niece. This is perhaps the truth which lies midway between those who assert, like Dr. Frazer, that magic and religion are hostile and cannot be reconciled, and those who, like Dr. Marrett, hold that in their origin they are the same, that it is in their character, as looked upon by society, they differ. The view I have maintained here is that religion and magic are different in their psychological and emotional effects, and that Dr. Frazer is right when he says that they are at bottom hostile. But the almost universal co-existence of magic and religion is due to the attitude of society, which tolerates all contradictions, and insists only on their effect being for social welfare.

K. M. PANIKKAR.

REVIEWS.

Australia: Religion.

James.

Primitive Ritual and Belief: an Anthropological Essay. By E. O. James, B.Litt., F.C.S. With an Introduction by R. R. Marett, M.A., D.Sc. London: Methuen & Co., Ltd. 1917. **63**

The chief motive of this little book is in essence apologetic; nor is the author's prefatory *tu quoque* excuse convincing. In many respects, however, it is an acute and excellent account and analysis of the religion of the Australian race, which is its subject. The distinction of rites into public and private is useful; but it may be doubted whether the wholesale initiation rites of the Blackfellows are strictly to be classed among the private rites. In any case it is easy to press the distinction too far. Naturally Mr. James advocates the late Andrew Lang's theory of the "High Gods of low races," and labours his proofs that the All-fathers of the Australian tribes were gods. I am inclined to agree with him that the central tribes had such a figure more or less in the background of their minds. Indeed, it seems to me likely that Mr. N. W. Thomas is right, that it can hardly be definitely asserted that there is or was any tribe without one. Whether such a figure should be called a god is to some extent a question of terminology. To speak of him as a self-created being, as immortal or eternal, is to introduce ideas which are not in

the native mind. It is the blunder of Ridley and Manning. Wherever we know any details concerning him he has a past on earth of adventure and magic and a more or less otiose present. Nor can it be suggested that he cannot be developed from animism, or rather from that vaguer, more germinal state of mind which Dr. Marrett has called pre-animism. In short, we seem to me to have arrested the Australian mind on the way to the evolution of a god not actually attained. Among the Bantu referred to by Nassau, and quoted by Mr. James, the idea of a being known variously as Egbo, Ukuku, and Yasi does not appear to be held, apart from the consciously fraudulent terrors circulated by the secret societies. Puluga, of the Andamanese, is, according to Sir Richard Temple, "fundamentally with some definiteness" "identifiable with the storm, mixed up with ancestral chiefs" (*Census of India*, 1901, iii, 63). And it is at least an open question whether the otiose "Supreme Being" of other peoples is not really an inchoate god, who might with favouring circumstances develop some time or other into a full-blown deity, rather than a god grown dim and overlaid by other interests.

In conclusion, the author admits that "the theory of a primitive revelation may" "be laid aside at once as untenable, and religion, like civilisation, regarded as a" "product of evolution, or as a search after the Unknown and the Infinite." Whether, as he further says, "a study of primitive ritual and belief reveals, among other" "things, a permanent element of truth—a progressive revelation," depends upon the reader's bias. The affirmative or negative would be equally difficult to prove; but the onus is on the former.

It is to be regretted that the printer's proofs have been corrected somewhat hastily; but the greater one's experience of the drudgery of correction, the greater will be one's sympathy with the author.

E. SIDNEY HARTLAND.

India: History.

Aiyangar.

A Little-known Chapter of Vijayanagar History. By S. Krishna Swamy Aiyangar. Madras. 1916.

64

This work deals with the history of the great Hindu kingdom of Vijayanagar, which played a considerable part in the events of the fifteenth and sixteenth century. Outside the pages of archaeological reports, almost the only work on the subject available to English readers has been *A Forgotten Empire*, by Mr. Sewell, in which is embodied a translation of the Portuguese Chronicle of Nuniz, one of the principal sources of information on this subject. Mr. Krishna Swamy Aiyangar has here brought together from inscriptions and other sources a large body of facts which add considerably to the existing stock of information. These bear mainly on the series of revolutions which established the Saluva family in power. The first of these kings and two of his successors bore the name of Narasinha, which was taken by the Portuguese and other Europeans to be the name of the kingdom rather than of its sovereign. Hence we read of the country of Narsinga, of which the capital was Bisanaga (Vijayanagar). This is a careful and useful piece of research.

M. LONGWORTH DAMES.

Australia: Church Missions.

White.

Round About the Torres Straits: A Record of Australian Church Missions. By Right Reverend Gilbert White, M.A., D.D., Bishop of Willochra. Society for Promoting Christian Knowledge. London: 1917. 2s. net.

65

This little book is a sketch of the work of the Australian Church Missions in Australia and British New Guinea, is solely of missionary interest, and is written

from a very Anglican point of view. There is nothing of special interest to Ethnologists in it, except some extracts from other writers, more especially from the really excellent book, *In Far New Guinea* (1914), by the Rev. H. Newton, now Bishop of Carpentaria. The frontispiece, entitled "A New Guinea Village," looks very suspiciously like a scene in Torres Straits. The title of the book is somewhat misleading, as the "round about" extends from North-west Australia to the north coast of British New Guinea.

A. C. HADDON.

Wales: Geology, Geography, &c.

Whitehouse.

Descriptive Handbook to the Relief Model of Wales. By Wallace E. Whitehouse, L.C.P. With an Introduction by H. J. Fleure, D.Sc. Post 4to. 61 pp. Seven Plates and Map. Published by the National Museum of Wales, at Cardiff. 6d. 66

"As soon as the National Museum of Wales became more than a paper institution it was felt that one of the first specimens which ought to be procured was a map of the country on a large scale, modelled in actual relief, so as to show not only the coastline but the mountains, valleys, and rivers." So begins the preface by Mr. W. E. Hoyle, Director of the Museum. The handbook gives full details of the manufacture of the model, with illustrations, and explains the geological and many other features of the country, and shows how the model or any section of it may be used for teaching and for illustrating a variety of subjects. The sixty-five sections are each 18 inches by 12 inches in size, and the scale 1 inch to the mile horizontal, 2.64 inches vertical.

A. L. L.

ANTHROPOLOGICAL NOTE.

ACCESSIONS TO THE LIBRARY OF THE ROYAL ANTHROPOLOGICAL INSTITUTE. 67

(Donor indicated in parentheses.)

An Elementary Môle Grammar. With a Vocabulary of over 1,000 words. By R. S. Ratray, M.B.E. $6\frac{3}{4} \times 4\frac{1}{2}$. - 85 pp. Clarendon Press. 5s. net. (The Publishers.)

Tāngkhul Nāga Grammar and Dictionary (Ukhrul Dialect), with Illustrative Sentences. By Rev. W. Pettigrew. $10 \times 6\frac{1}{2}$. 476 pp. Assam Secretariat Printing Office. 4s. 6d. (The Superintendent Government Printing.)

Die Steinzeitlichen Stationen des Birstales Zuris'chen Basel und Delsberg. By Fritz Sarasin. $12 \times 9\frac{1}{2}$. 210 pp. 32 Plates and 20 Figures in the Text. Kommissions-Verlag von Georg & Co., Basel. (The Author.)

The American-Indian. By Clark Wissler. $9\frac{1}{4} \times 6\frac{1}{4}$. 435 pp. 104 Illustrations and Maps. Douglas C. McMurtrie, New York. \$3.15. (The Publishers.)

A Dictionary of the Maori Language. By H. W. Williams, M.A. $8\frac{3}{4} \times 5\frac{1}{2}$. 590 pp. Marcus F. Marks, Wellington, N.Z. 1l. (Purchased.)



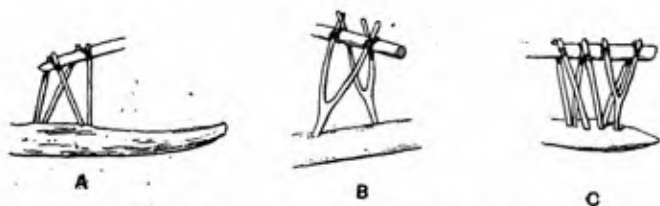


FIG. 1.—TORRES STRAITS ATTACHMENTS:
A—TYPICAL; B, C—VARIATIONS SEEN AT MABUIAG.
(AFTER PHOTOGRAPHS.)

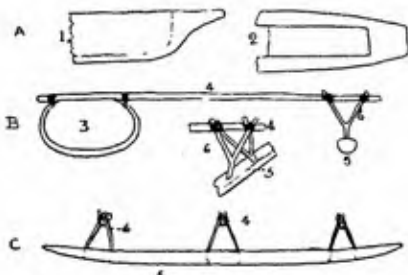


FIG. 2.—COASTING CANOE, NEW CALEDONIA.
(DRAWN BY T. MONTAGUE.)

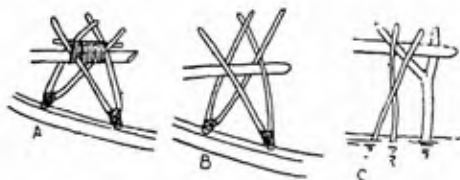


FIG. 3.—ATTACHMENT OF CANOES:
A, B—MARE, LOYALTY ISLANDS;
C—NEW CALEDONIA.
(AFTER PHOTOGRAPHS BY F. SARASIN.)



FIG. 4.—ATTACHMENT OF A SIKAIANA
CANOE.
(AFTER THILENIUS.)

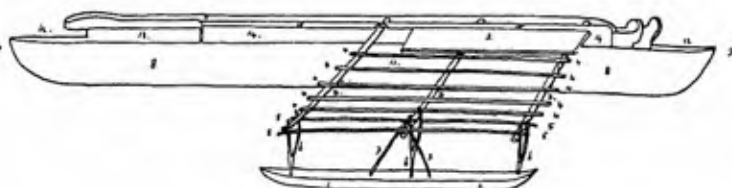


FIG. 5.—SIKAIANA CANOE.
(FROM WOODFORD.)

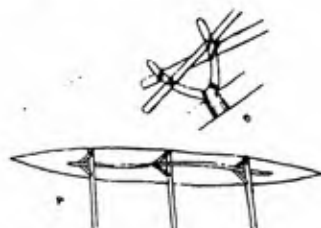


FIG. 6.—LIUENIUA CANOE AND
ATTACHMENT:
A—OUTRIGGER VIEWED FROM ABOVE;
B—ATTACHMENT, SLIGHTLY SIMPLIFIED.
(AFTER FRIEDERICI.)

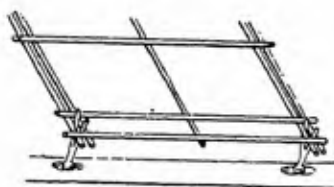


FIG. 7.—ATTACHMENT OF A CANOE
FROM THE MARSHALL ISLANDS (?).
(HORNIMAN MUSEUM.)

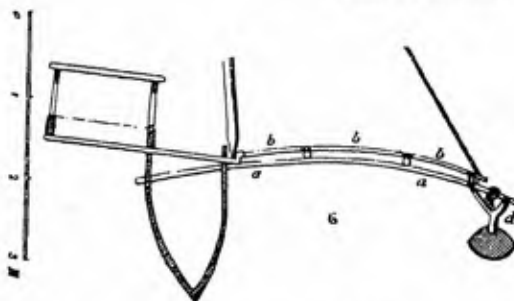


FIG. 8.—SECTION OF A SAILING CANOE AND ITS
OUTRIGGER, CENTRAL CAROLINES.
(FROM KUBARY.)

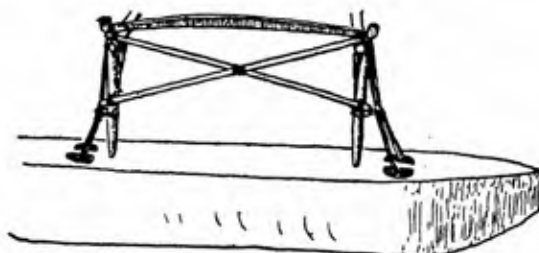
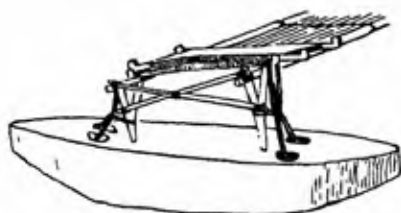


FIG. 9.—ATTACHMENT OF A MODEL CANOE FROM THE PELEW ISLANDS.
A—PERSPECTIVE VIEW; B—END VIEW. PITT RIVERS MUSEUM, OXFORD. (SKETCHED BY H. BALFOUR.)

ANOMALOUS FORM OF OUTRIGGER ATTACHMENT IN TORRES STRAITS.

ORIGINAL ARTICLES.

Melanesia: Canoes.

With Plate H.

Haddon.

An Anomalous Form of Outrigger Attachment in Torres Straits, and its Distribution. By A. C. Haddon.

68

The typical method of connecting the float to the outrigger booms of the originally double outrigger canoe in Torres Straits is by means of two pairs of sticks, the sticks of each pair being parallel or converging over the boom (but not necessarily crossing over it) and diverging from the other pair (Plate H, Fig. 1 A). Anthony Wilkin photographed two canoes at Mabuag in 1898, which had the attachments shown in Fig. 1 B, C; in the B a pair of Y-shaped sticks replace the four simple sticks of the normal type, C is a composite method, being based mainly on a somewhat simplified type of attachment characteristic of the estuary of the Fly (cf. Haddon, 1913, Fig. 3), but the Y-shaped stick has also intruded. I regret, not being then aware of the importance of the method of attachment, that I did not inquire into the matter, and when I wrote my article on "The Outrigger Canoes of Torres Straits and North Queensland" in the *Essays and Studies Presented to William Ridgway* (Cambridge, 1913, p. 609), I could not make any definite statement concerning this anomaly.

In an account of his expedition to New Caledonia, R. H. Compton gives a brief account of the canoes of that island in which he says, "The far ends of the booms were attached to the float by means of pairs of Y-shaped sticks; this arrangement being closely similar to that observed in the canoes of the Torres Straits" (*Geog. Journ.* XLIX, 1917, p. 100, and Fig. 6). He overlooked, however, the fact that I had pointed out that this was an anomalous arrangement in that area. Before he accompanied Mr. Compton on his expedition I asked my friend, Paul Montague, to make certain ethnographical investigations, particularly in regard to canoes, and on his return he confided his notes to me, which will be published in due course;* in the meantime I reproduce one of his drawings of the simplest form of outrigger canoe (Fig. 2). He says this type, which consists of a simple dug-out with three booms, is used for coasting purposes; the smaller, but otherwise identical, river canoes having only two booms; he adds that the canoes of the New Caledonians show a remarkable uniformity in all essentials in every locality visited. He also gave me the following terminology:—

	Hull.	Booms.	Attachments.	Float.
Houailu (middle of E. Coast)-	<i>kouiu</i> or <i>kud</i>	<i>kiao</i>	<i>mu</i>	<i>douion</i> (<i>dwiu</i>)
Ouebia, Bondé Balade, Pouébo	<i>wangwe</i> (also <i>kalaba</i> at Pouébo).	<i>poulame</i>	—	<i>adiiti</i>
(N.E. district).				

G. Friederici (1912, pp. 245, 246)† quotes from the *Vocabulaire Mariste* the words *kouan* (*kuan*) *korbâ* (*korpa*) for the outrigger canoe of Nékété [Nakéty] and Thyo [Thioo] on the east coast of New Caledonia, opposite to Maré, *kouiu* or *kwa* are variants, and there are several analogous words which Friederici equates with the *guban* of the Sulu Archipelago; in north New Ireland the form is *kuva*, *kovo*.

Wangwe is a form of the widely spread *wangka* and its variants, which is the *hākā* of Ambon (Amboina).

Kalaba may be a form of *alal*, *tala*, *talalo*, &c., of Ambon and the Uliassers; *älä*, Dallmann Harbour district, New Guinea; *välä*, Muschu I., which Friederici

* Since these lines were penned I have heard, with great sorrow, that my young friend, Montague, has been killed in action.

† The references to Friederici are to *Mitt. aus den Deutschen Schutzgebieten*, Ergänzungsheft Nr. 5: "Beiträge zur Völker- und Sprachenkunde von Deutsch-Neuguinea," Berlin, 1912; and *ibid* Nr. 7, "Untersuchungen über eine Melanesische Wanderstrasse," 1913.

thinks may also be allied to *yēl* of Weeda in Halmahera, which passes into the Melanesia as *kēl* or *gēl*, or as *kelakela* in Anudba, Solomons.

Kiario is evidently a form of the word *kiato* or *iato*, which is the very widely spread name for outrigger booms in Indonesia and Oceania.

The nearest analogue for *poulame* that I can find is *uramon*, the Banda term for the booms.

Duiu is probably allied to *ouanghé* (*uanhe*), the term for the float in the Nékété-Thyo language, which Friederici seems to suggest is a form of *kuan* [see above] and also *kūbāk*, the name for the float in the Marshall Islands; if this be the case this name for the float in New Caledonia and the Marshall Islands is a variant of the term for a canoe [cf. MAN, 1918, 29]. It is worth while recalling that a Y-shaped attachment occurs also in the Marshall Islands (Fig. 7).

I cannot trace the word *adiāi*.

Fritz Sarasin, in his recently-published book, *Neu-Caledonien und die Loyalty-Inseln* (Basel, 1917), gives an illustration (Fig. 124) of a fishing canoe at Touaouru (S.E. coast), which is a simple dug-out with two booms, one of which has the double Y-attachment, and the other a single Y-stick on one side of the boom and two oblique sticks on the other (Plate H, Fig. 3, c). He also figures two canoes from Maré, Loyalty Islands, one at Pénélo (on the E. coast) and the other at Eni (S.W. coast); both are allied to Montague's third New Caledonian type with three booms, "sea-going" canoes with a high wash-strake and platform deck," but in these the platform is lacking; the attachments are of the New Caledonian type, though the stem of Y is very short, reducing it practically to a V (Plate H, Fig. 3, A, F.) S. H. Ray, in his memoir on Lifu, Loyalty Islands (*Journ. Roy. Anthr. Inst.*, XLVII, 1918, p. 25), gives the words *he* for canoe and *hnapan* for float, and refers to the statement by Rochas that the Lifuan canoes were the same as those in New Caledonia.

In the Bankfield Museum, Halifax, there is a model of a canoe from the Loyalty Islands with the two booms, high wash-strake, and a platform; each attachment, however, consists of a single pair of parallel vertical sticks; for the present it must be left an open question whether this represents an actual method of attachment.

The New Caledonian and Loyalty Islands' attachment undoubtedly consists typically of a pair of Y-shaped sticks, the forks of which converge over and beyond the boom—precisely as in one example at Mabuig in Torres Straits. The explanation of the latter is now perfectly clear. It was made by a Loyalty Island resident in Mabuig. S. McFarlane, in his book, *Among the Cannibals of New Guinea* (1888), describes how he founded the Mission in Torres Straits in 1871 "with a few Lifu teachers in our boat" (p. 26), and "thus our Lifu and Maré converts became the pioneers of the New Guinea Mission" (p. 9); other Loyalty Islanders followed in their wake. I knew several of them in Mabuig in 1888, and some still remained in 1898. I have collected several wooden clubs typical of the Loyalty Islands in Mabuig and other islands of Torres Straits (cf. *Rep. Camb., Anthr. Exped. to Torres Straits*, IV, Cambridge, 1912, p. 195).

The Y-attachment has a yet wider range. G. Thilenius first recorded it from Sikaiana (Stewart Island, east of Malaita in the Solomons). He gives an excellent illustration (Pl. III, Fig. 1) of a canoe, *vaka*, with a single outrigger composed of three booms, *kiato*, each of which is supported by a Y-stick, *fakato* or *hakatu*, which is inserted below into the float, *ama*. The forks of the front stick are on the fore side of the fore boom, and those of the hind stick on the aft side of the aft boom, whereas the central boom projects between the forks of the central stick. There are two accessory simple oblique sticks, *tongi*, to each *hakatu*. There is an outer and an inner longitudinal spar, *palo*, which are so bent that they pass over

the central boom and under the outer booms (Fig. 4). (Ethnogr. Ergebnisse aus Melanesien. *Nova Acta Abhandl. Kais. Leop.-Carol. Deutsch. Akad. der Naturf.*, LXXX, Nr. 1, Halle, 1902.) His account is confirmed by Friederici.

C. M. Woodford has published a figure of a canoe, *te waka* (Fig. 5), which has a single outrigger with three booms, *te giato*, each of which is attached to the float, *te ama*, by a single forked stick, *hagatu*, the central one having in addition two oblique sticks, *te tugi*, which cross over the boom. There is also an outer and an inner longitudinal spar, *te halo*, the aft ends of which pass below the aft boom, as also the fore end of the inner *halo* appears to do, but the fore end of the outer *halo* passes above the fore boom. This may be an error in drawing. (MAN, 1912, 99.)

In a northerly direction lies the island of Liueniua (Luaniua, Lord Howe, or Ongtong Java), where, according to Friederici, the canoes have three or four (in one case five) booms, each attached to the float by a Y-stick, the stem of which is inserted in the float, so that it looks like a V- or U-attachment (Fig. 6). He states that it most decidedly recalls the Moluccan-Barriai-Nakani attachment. There is a longitudinal spar between the forks, which passes over the central boom and under the outside ones (1912, p. 299, pp. 100, 101b).

Friederici gives the following terms for Sikaiana and Liueniua: Canoe, *vakā*, S., *vā*, L.; boom, *hiātō*, S., *yēko*, L.; attachment, *hāgāto*, S., *haku*, L.; float, *āmā*, S., L. (l.c., p. 302).

Friederici (p. 301) points out that Nuguria, Tauu, and Nukumann, the three northerly islands of the group, use simple attachment-sticks, while the two southerly ones, as we have seen, employ the Y-stick. Thilenius (pp. 70, 71) states that these "Polynesian islands on the eastern border of Melanesia" have had colonists or visitors from Polynesia, Micronesia, and Melanesia. People from Tonga, Rotuma, Gilbert Islands, Buka or Bougainville, etc., have come to Liueniua, and from Tonga, Samoa, San Cristoval, etc., to Sikaiana (see also his map, Pl. V). It is therefore worthy of note that there is so little variation in the form of the canoe and its outrigger.

This attachment is also characteristic of parts of Micronesia, but others occur there as well.

A. Krämer (*Hawaii, Ostmikronesia, und Samoa*, Stuttgart, 1906, pp. 356-360) gives an excellent account of the craft of the Gilbert Islands. The small fishing raft, *te ebeeb*, is composed of a platform supported by Y-sticks on two floats, consisting of piles of beams. He says this raft is exactly like the outrigger canoe, except that instead of the canoe there is another float. There is a small outrigger canoe, *toā* or *te vā*, for paddling. The sailing canoe, *toaririk* or *te doa* (the largest kind is called *bauru*) has three booms, *giaro*, connected with the float, *te rama*, by forked supports, *te dodo*. To the west is the island of Nauru (or Nawodo, 0° 25' S., 167° 5' E.), where, according to Krämer, the canoes show more affinity with those of the Gilberts, though Melanesian influence is undeniable. He does not describe this type, but, judging from the somewhat indistinct photograph (Bild 73, p. 454), the booms and their attachment are precisely similar to those of my Fig. 7. The artist who drew Fig. 45 (p. 454) has evidently made a mistake, as he figures three, instead of five, booms; the fore Y-attachment is aft of the fore boom, while the aft attachment passes through the aft boom, the artist evidently having mistaken the two booms, which are close together, for the top and side of a single boom. The lashing of the Y-stick encircles the long float.

A canoe in the Horniman Museum, Forest Hill, London, may be allocated to the Marshall Islands, as its bow and stern correspond exactly with an illustration of the end of a canoe-model from the "Marschall-Ins." given by W. Müller-Wismar

(*Baessler-Archiv*, II, 1912, Fig. 36, p. 242). The outrigger (Fig. 7) is single, and consists of five booms, the two fore ones of which are very close together, and are supported by a single Y-stick, as are the two aft booms; the central boom is not connected with the float. There is an outer and an inner longitudinal spar. The base of each Y-stick is slightly expanded, and fits into a depression in the very long float; unfortunately the lashing has not been preserved. As previously stated, the outrigger precisely resembles the Nauru type, but the canoe itself does not agree with Krämer's figures. Krämer, however, does not refer to this type of attachment in the Marshall Islands, but describes a complex outrigger with two central booms, each with one or two pairs of vertical sticks, combined with numerous flanking booms with direct attachments. An analogous, but detachable, outrigger with combined indirect and direct attachments occurs in the Santa Cruz group.

J. S. Kubary, in his beautiful and detailed monograph (*Ethnogr. Beitr. z. Kenntnisse des Karolinen Archipels*, Leiden, 1895), does not refer to the Y-attachment in the Marshall group. He figures (Pl. LIV, 6) a sailing canoe from the central Carolines, the outrigger of which consists of two booms, *kio*, each supported by a Y-stick, *edm*, the stem of which is entirely inserted into the float, *tam* (Fig. 8). [It is interesting to note that in the Polynesian Nukunor, 155 E. Long., south of the Mortlock group, the attachment consists of simple sticks, much as in other Polynesian islands.] The outrigger of a model of a canoe in the Leiden Museum, from the Caroline islands, has two booms each supported by two Y-sticks. In the figure given by Kubary (Pl. LIV, 5) of a Ponape attachment, there are three booms, *kiai*, the outer ones of which are supported by two attachment sticks, *rah*, which may be the branches of a Y-stick, but this is not clear; there is an additional bent spar, *apic*, which connects the float, *tām*, with the side of the hull, *namwar*, though it is not inserted into the latter. The small sailing canoe, *kaép*, of the Pelew (Pelaue) group, as described and figured by Kubary, has two booms, *soäes*, each supported by a Y-stick, *ulay*, the main stem of which is vertical, the branch coming out at angle from it (as in Fig. 7), the outer surfaces of the *ulay* are braced by two crossed spars, *torär*; there is also a short curved longitudinal spar, *kametäl*, which is also made fast to the float, *dosómel*, by a lashing, *tul a kametäl* (Pls. LIII, 6, 7). This arrangement is precisely similar to that in a model of a canoe from the same group in the Pitt Rivers Museum, Oxford (Fig. 9).

It may be noted that intercourse has been recorded by Thilenius (*l.c.*) between Liueniua and the Gilberts on the one hand and with Tonga on the other, and also between Sikaiana and Tonga; at all events, this is a part of the line of distribution of the attachment in question. Judging from indistinct photographs, I suspect that Reef Island, Santa Cruz group, also forms a link in the chain to New Caledonia.

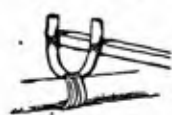
Friederici (1912, pp. 238-9), gives the following terms from Indonesia:—

	Canoe.	Booms.	Attachment.	Float.
Banda - - -	<i>prau</i> (<i>prahu</i>)	<i>āramān</i> <i>āramān</i>	<i>āngēru</i>	<i>semān</i>
Ambon - - -	<i>hāka</i> <i>prau</i>	<i>nadyūn</i> <i>nādyu-nādyu</i>	<i>pāgupāgu</i>	<i>semān</i>
Batjan - - -	<i>nyōa</i>	<i>bairānān</i>	<i>tudātudā</i>	<i>somān</i>
Ternate - - -	<i>oti</i>	<i>nādyu-nādyu</i>	<i>pāgu</i>	<i>samā</i>

It should be remembered that in all the above Indonesian instances the U-Moluccan attachment is associated with a double outrigger, whereas all the canoes I am referring to in the Pacific have but a single outrigger.

It is possible that the Y-form is a modification of a single stick attachment, but I am inclined to regard it as a variety of the U-shaped Moluccan attachment (Fig. 10A). This extends from the south-east islands of the Kei group (model in

the Amsterdam Museum) to the Sulu Archipelago, from which group Baessler figures a model of a sailing boat with a double outrigger: this latter is really a two-boom type, but each boom has another one vertically above it, from which it is separated by a small space; each U-attachment is fastened to both of these booms



A



B



C

FIG. 10.—MOLUCCAN ATTACHMENTS: A, BATJAN; B, AMBON; C, BANDA. A AND C AFTER PHOTOGRAPHS BY GUILLEMAUD (NOS. 334, 161); B AFTER FRIEDERICI

(*Int. Arch. f. Ethnogr.* IV, 1891, p. 66, Pl. VIII, Fig. 4). The single U-attachment occurs also at Wetar or Wetta, north of Timor (Riedel, *De Sluik-en Kroesharige Rassen*, 1886, Pls. XLI, -Fig. 12, XLIII, Fig. 8, where the canoe is called *bero*). Friederici (1912, pp. 235-44) has sufficiently recorded its distribution in the Moluccas: he says: "This Moluccan attachment occurs as the predominant or exclusive form of attachment on Banda, Ambon, and the Uliassers; on Ceram, with the exception of a few places on the north coast, and sporadically on Buru. I have shown in "Part II that it was also sporadically diffused through the Northern Moluccas" (1913, p. 161).

The double V or Y-shaped sticks of the Loyalty islands and New Caledonia certainly strongly resemble the double U-Moluccan attachment, which Friederici first described among the Barriai, Kobe, and Kilenge folk on the north coast of the western end of New Britain (but less so among the Kilenge of the extreme west, who are strongly influenced by the stick attachment of New Guinea), at Witu (French islands, north of New Britain), and among the Nakanai of the north coast of New Britain close to the Gazelle peninsula (Fig. 11, A, B) (1912, pp. 244, 269). I have pointed out (1913, p. 622) that this attachment (Fig. 11 c) was figured, but not described, by Verguet in the small *étea* canoe of San Cristoval in the Solomons (*Rev. d'Ethnogr.*, IV., 1885, p. 193). Friederici has also noticed this (1913, p. 161), where he says that the Moluccan attachment is characteristic of his Alfuran migration, to which I shall allude later. He only knows it in addition from "Sikayana" and "Luaniua." It is interesting to find that the crossed double U-attachment also occurred in Tonga (Fig. 11 d), where it is now obsolete. Basil Thomson (*The Diversions of a Prime Minister*, 1894, p. 343) gives a sketch of a *tafaanga* in the surf. He also presented a model of the old Tongan canoe to the Cambridge Museum of Archaeology and Ethnology, and informs me that it was made partly by and partly under the personal supervision of the late King George of Tonga, who in his youth was a noted canoe maker. The *tafaanga*, as it was called, was displaced early last century by the Fijian *ndrua*. It will be observed that in the San Cristoval example, Thomson's figure of the Tongan canoe (which in this respect is erroneous), and the type in the Loyalty islands and New Caledonia the bars of the

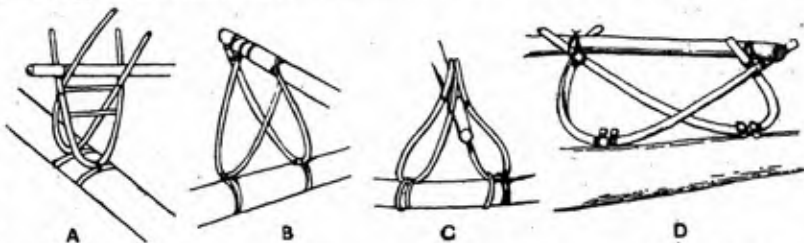


FIG. 11.—DOUBLE U-MOLUCCAN ATTACHMENTS, A, NAKANAI, AFTER FRIEDERICI (1912, p. 269); B, KÁLOGA, FRENCH ISLANDS, AFTER E. STEPHAN; SÜDSEEKUNST, BERLIN (1907, FIG. 102); C, SAN CRISTOVAL, AFTER VERGUET; D, TONGA, MODEL IN CAMBRIDGE MUSEUM.

attachments cross over the booms, whereas in the French islands, New Britain, and the model of the Tongan type (which is certainly correct) they cross under and thus support the boom.

According to Friederici (1913, pp. 1, 11-15, 18, 19) the Alfurs were the ancient inhabitants of Ceram and the adjacent islands, whose descendants still occupy the interior of these islands, the coastal peoples belonging to later settlements. These Alfurs, or an allied people, sent off migrations round New Guinea into the Pacific. One branch would reach the north coast of Rook island and the land of the Kilenge, Barriai, Kobe and Nakanai on the north coast of New Britain, and according to his map reached the north-west coast of New Ireland. A second branch which sailed near Rook Island through Dampier Strait, struck the Siassi islands and the south coast of west New Britain, and may have reached the southern Solomons and the New Hebrides by way of the Trobriands and Murua; but he cannot prove this. A third branch passing through Vitiez Strait left a colony among the Papuans of the Jabim district and occupied Tami islands,* then came down the coast of New Guinea to the Massim district, or more particularly the d'Entrecasteaux islands and adjacent mainland. In the Massim district perhaps they found an old stratum of Melanesians or Melanesianised Papuans, so they passed on round South Cape, and finally reached the area now occupied by the Western Papuo-Melanesians, as far as the Mekeo district; but a portion remained behind in the Massim district. His contention is that this branch is allied linguistically to the Barriai of the first branch, and he sees nothing in the physical or cultural traits examined by him which incontrovertibly contradicts this conclusion. This migration is also characterised by the words *wanagi*, *waona*, *wa*, *vaka*, etc., for an outrigger canoe. There are, however, reasons for supposing that the problem of the origin and affinities of the Western Papuo-Melanesians and their culture is not so simple as this theory implies. For example, the double canoe occurs in New Guinea only among the Western Papuo-Melanesians (who undoubtedly introduced it to certain tribes of the Papuan Gulf), but it does not seem to belong to any of Friederici's Alfuran migrations, as it is absent from northern and central Melanesia, though characteristic of Polynesia; but it may have become obsolete in Melanesia. A characteristic attachment among Western Papuo-Melanesians, from Tupuselei to the Hood Bay district,† consists of two vertical sticks which clamp the forked ends of the booms, precisely as in the south New Ireland, Gazelle Peninsula (New Britain), and Duke of York Island; but according to Friederici's map these latter localities were not colonised by an Alfuran migration. I hope to recur to this problem on another occasion. Neither the double U-Moluccan attachment nor the Y-stick reached British New Guinea, unless they have been entirely replaced by other types of attachment. The languages of the Alfuran migrations are characterised by the pre-position of the genitive.

Friederici also recognises another line of migration, consisting of several detachments, his Philippine or sub-Philippine, which, starting from Palawan, passed through the Sulu archipelago; north of Halmahera it met another affluent coming from the north-east point of Celebes, thence the stream of migration flowed not far from the coast of New Guinea (which was colonised at some points between Humboldt Bay and Dallmann Harbour and in the vicinity of Astrolabe Bay), reached New Hanover and New Ireland, and passed down to the New Hebrides (1913, p. 37). He regards the term *guban*, originally for a double outrigger canoe (which apparently had a direct

* The ethnology of the Tami islands has been complicated by a relatively recent cultural drift from the western end of New Britain.

† Forked booms with a different stick attachment extend to Aroma.

attachment), as characteristic of this migration, as is also the post-position of the genitive.

I must confess that I do not quite understand the position adopted by Friederici. He allocates the double **U**-Moluccan attachment solely to his Alfuran migration (though the double form does not occur in Indonesia), and by implication limits it to his first two branches (it occurs among the Barriai group of the first branch) though in the second he knew of it only in San Cristoval, but this attachment also crops up in Tonga. If the double **V** or **Y**-stick attachment is a variant, then this Alfuran migration may have reached New Caledonia, bringing with it the word *wangwe* for a canoe.

The single **Y**-stick attachment occurs, as we have seen, in Sikaiana and Liueniua. Friederici formerly suggested that these islands may have been influenced from San Cristoval (1913, p. 161), but subsequently in a letter he abandoned this view. He does not, however, allude to the widely-spread distribution of this attachment in Micronesia, the whole of which lies within the area of his Philippine migration. Possibly Friederici may not now admit a connection between the **Y**-stick and the **V**-Moluccan attachment, as the **Y**-stick (single or double) is not recorded for the Philippine area, but, as I have just pointed out, Baessler figures the **U**-attachment from the Sulu archipelago, which is outside of the Moluccan-Alfuran area. If the New Caledonian attachment is simply a duplication of the single **Y**-stick, then we have an interrupted line from Micronesia to New Caledonia which cuts across the distribution of the double **U**-attachment.

If Friederici is correct in equating *uanhe* (and ? *douoiu*) with *kuan* (to which *kouiu* seems allied) then the Sulu term *guban* for a canoe reached New Caledonia; but this is a criterion of his Philippine migration. As we have seen, he regards *kubak*, the word for a float in the Marshall Islands, as a variant of *guban*. As the **U**-attachment occurs in the Sulu Islands and the **Y**-stick in the Marshall, we may infer that this attachment was also brought into the Pacific by the Philippine migration. As there is only one kind of attachment in New Caledonia it is possible that the "Alfuran" double **U**-attachment and the "Philippine" single **Y**-stick met in New Caledonia, and that under the influence of the former the latter became doubled.

My main object in compiling these notes is to emphasise how suggestive such an apparently insignificant feature as an outrigger attachment may be in the elucidation of the problems of distribution.

A. C. HADDON.

Malta: Landmarks.

The Maltese Cart Ruts. By Captain E. G. Fenton, R.A.M.C.

Fenton.

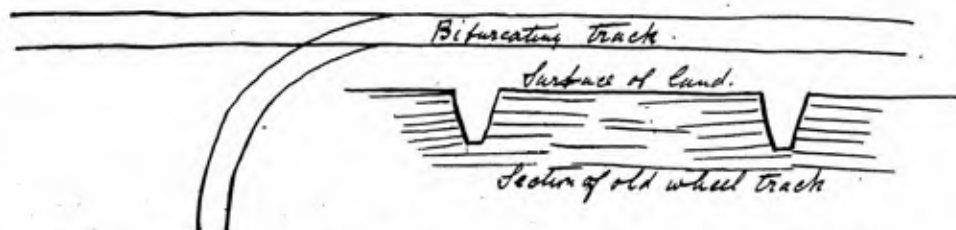
Professor Boyd Dawkins referring in MAN, 1918, 52, to my paper on "The Maltese Cart Ruts" (MAN, 1918, 40), stated that without doubt they are not artificial, but are due to weathering of the rock under natural conditions, that they are merely ordinary joints widened by rain water, and that they have no archaeological significance. These are strong and sweeping statements to make with regard to a subject which has already been dealt with by several writers who have studied the subject first hand.

During 1916 I had the opportunity of visiting Malta on several occasions, and I took up the study of these cart tracks as a hobby in my leisure time. As a result of many days' careful observation I may say that I, at least, am satisfied that these "ruts" are really old wheel tracks cut in the rocks of Malta, and that they are not joints opened by water action.

I am sure that if Professor Boyd Dawkins had ever seen these old roads he would not have made the statements mentioned above. According to him the "ruts"

should run in two principal directions, one slightly to the east of north, and the other slightly to the south of east. Now, I can assure him that they sometimes run straight, but much more often curve in every direction possible. I have seen them come to the top of a rather steep hill, and instead of going straight down, they took a sharp bend and made a long zig-zag so as to choose an easy gradient of descent. He says the photograph shows a second set of joints cutting the original more or less at right angles; but I can inform him that what he imagines to be a joint in Fig. 1 is a modern road which has been cut across the old track, but as it is somewhat sunk it does not appear. Again, I would like to ask him why do these "joints" always run in parallel pairs, bending in every possible direction, cutting the stone at every imaginable angle to its natural fissures, and always maintaining the same exact distance from rut to rut? And why was I never able to find a single rut?

The accompanying lines traced will show how two independent tracks often are found to meet and proceed afterwards as one:—



I have often noticed bifurcations of the above type, and I have also found in more than one place a modern cutting exposing a cross section of an old track. In these latter instances it appeared something like the above rough drawing. The ruts were found to be cut in a clean homogeneous rock, used locally as an excellent building stone, and no fissures extended down from the floors of the ruts, but the stone under them was absolutely unbroken.

To my humble mind the evidence is absolutely conclusive that these are old wheel tracks, dating probably from some former period of civilization, possibly Roman. As I am at present in France I regret I am unable to look up the authors who have already touched on this subject, but I remember hearing of one who mentioned them in a work written over a hundred years ago, and he described them then as remarkable antiquities.

Since writing my reply to the criticism of Professor Boyd Dawkins of my paper on the Maltese Cart Ruts (above) I have received from a friend a letter mentioning a reference to them in a work published in 1773, with a new edition in 1775. The title is *A Journey Through Sicily and Malta*, and it consists of a series of letters written by P. Brydone, F.R.S., to William Beckford. In one of these, written in Malta on June 5th, 1770, Brydone says: "It is very singular that on this side there are still vestiges of several ancient roads with the tracks of carriages worn deep in the rocks. These roads are now terminated by the precipice, with the sea beneath, and show to a demonstration that the island has in former ages been of a much larger size than it is at present." I have been informed by several people that the tracks are found in places, both in Malta and Gozo, passing over the cliff, but I have myself never seen them do so. I have only, however, visited a comparatively small portion of Malta and I have never been to Gozo.

E. G. FENTON.

Central America: Chronology.

Long.

The Maya and Christian Eras. By Richard C. E. Long.

70

The method by which the Mayas reckoned time from the zero point of their chronology is now well established, and may be found fully set out in the works of Mr. C. P. Bowditch (*The Numeration, Calendar System, and Astronomical Knowledge of the Mayas*, Cambridge, Mass, 1910) and Mr. S. G. Morley (*An Introduction to the Study of the Maya Hieroglyphs*, Washington, 1915). It is sufficient here to recall that the units of time used are the day or *kin*, the *uinal* of twenty days, the *tun* of eighteen *uinals*, the *katun* of twenty *tuns*, and the cycle of twenty *katuns*. In this paper the usual method of writing these periods will be used, by which, e.g., nine cycles, sixteen *katuns*, four *tuns*, eleven *uinals*, and eight *kins* are written 9-16-4-11-8. It will be assumed here that the higher units above the cycle follow the vigesimal scale, so that, e.g., 2-4-0-0-0 reads as two great cycles (each containing twenty cycles) and four cycles. Many different suggestions have been made to determine the date in the Christian era corresponding to the date 4 Ahau 8 Cumhu, the zero point of the Long Count.

Mr. Bowditch (*American Anthropologist*, N.S. III, No. 1, 1901) by calculating from the date 11th September 1536 reaches a result by which this latter date would in the Long Count (taking above value of the great cycle) be 13-2-13-3-1, 9 Imix 19 Zip. Mr. T. A. Joyce (*Mexican Archaeology*, London, 1914) does not go into the calculation from this date, but compares the Short Count dates of the Books of Chilán Balam with the Long Count, and reaches a result which would give exactly the same date. The important point is that these writers reach the same result by different methods. Neither of them had occasion to work out the exact days of the month and exact year in the Christian era corresponding to other Maya dates. Mr. Bowditch uses the "vague" year of 365 days instead of the Julian or Gregorian year to convert the Long Count dates to dates in the Christian era, and the dates given in the appendix to Mr. Joyce's book are also approximate. Assuming that 11th September 1536 was 13-2-13-3-1 in the Long Count, and also assuming, in accordance with the opinion of Mr. Bowditch and Mr. Morley, that the Mayas made no intercalation in their calendar, but used only a vague year of 365 days, which consequently shifted round by one whole vague year in 1461 years, I have calculated in annexed table the exact dates of each cycle date up to cycle 8 and of each *katun* date from that to *katun* 2 of cycle 14. No "historical" dates are found before cycle 8, so it is unnecessary to give each *katun* of earlier cycles.

The series has been brought up to date, as the books of Chilán Balam carry on the Short Count into the 18th century. The Julian calendar has been used throughout, as it was in use during the existence of the Maya reckoning, and is also more convenient for calculation.

Now the remarkable fact emerges that by such a calculation the date 9-9-16-0-0, 4 Ahau 8 Cumhu, fell upon 21 June, A.D. 100, that is, on the summer solstice, because in A.D. 100 the Julian calendar was at most not more than a day in error. Dr. Forstemann has shown the prominence of this date in the Dresden Codex, and that it seems to be the date which all the other dates in the Codex lead up to. The number 9-9-16-0-0 contains as factors most of the important numbers in the Maya calendar, and has the especially important property that after the lapse of this time the *tun*, the calendar round, and the Venus cycle of 104 years all coincide.

This throws some light on the nature of the date of the zero point of the Long Count, which also fell on a date 4 Ahau 8 Cumhu: Mr. Morley (*op. cit.*, p. 60) has shown good reasons for believing that this zero point was not a real historical

date from which the Mayas commenced reckoning, but rather a date chosen for the zero point of the era very long afterwards. It seems difficult to resist his conclusion, seeing that, with certain exceptions which can be otherwise explained, no objects are found dated in the first seven cycles, and the monuments only commence in cycle 9.

I suggest, then, that the mythical zero point, 4 Ahau 8 Cumhu, was obtained by calculating back from 9-9-16-0-0, 4 Ahau 8 Cumhu, which latter date fell some time after the calculation was made. The reason for counting back the distance number, 9-9-16-0-0, was owing to the remarkable properties of this number, and as to the reason for selecting the date, 9-9-16-0-0, 4 Ahau 8 Cumhu, to count back from, there are two suggestions possible:

(1) This date was one on which the summer solstice fell on the day Ahau, the most important of the twenty days of the *uinal*. If we take the tropical year to be $365\frac{1}{4}$ days, which for short periods is sufficiently accurate, it can be shown that the summer solstice would not again fall on Ahau till after nineteen years if the previous occurrence was in an ordinary year, or twenty-three years if it was in a leap year, so that the choice of days Ahau which are also days of the summer solstice is limited. Further, it would be natural to select such a day falling in the month Cumhu, the last month of the year, following the general Maya principle of reckoning from the ends of periods. If this last be granted it will be found that the choice of dates is practically limited to four, viz., 6 Ahau 3 Cumhu (nineteen years before 4 Ahau 8 Cumhu), the date 4 Ahau 8 Cumhu itself, 6 Ahau 13 Cumhu (twenty-three years after 4 Ahau 8 Cumhu, because A.D. 100 was a leap year), and 4 Ahau 18 Cumhu (nineteen years after 6 Ahau 13 Cumhu). Any earlier or later date would fall outside of the month Cumhu, and the solstice would not again fall in Cumhu for a very long period of time.

(2) The foregoing suggestion only presupposes that the Mayas, previous to making this calculation, only used their 365-day year and the calendar round of 52 years, and no additional fixed time period. But if we suppose that besides the year of 365 days they also used the year of 360 days, the *tun*, not merely as a counter but as a fixed period with its own recurring New Years Day, concurrently with the 365-day year, it will be found that the solstice would not again fall on a day Ahau which was also the last day of a *tun* for a very long period, and that neither its next nor its previous occurrence on Ahau would fall in Cumhu. It would not fall again on Ahau in Cumhu within a cycle either before or after. Therefore, on this supposition there is no choice of any other day within the limits of "historical" Maya dates.

It is clear that the choice of the date 9-9-16-0-0, 4 Ahau 8 Cumhu, to reckon back from must have been made while the date itself was still in the future, because there are many "historical" Maya dates much earlier in cycle 9, and probably the cycle 8 dates are also "historical." The objection will at once be made that the Mayas could not have known beforehand that the summer solstice would fall on this date. I do not, however, think that this objection has any weight. Mr. Bowditch has shown that the Mayas seem to have been skilful enough to have calculated the true length of the tropical year very closely while leaving their shifting calendar undisturbed, and Mr. Morley agrees with him. They appear to have allowed for a shift of 25 days in 104 years, which is an error of less than a day in 400 years, and so if they had made the calculation during cycle 8, say 400 and odd years previously, they would have come within a day of the true time. The foregoing consideration may therefore be taken to be an independent confirmation of the correctness of the correlation of Maya and Christian chronology arrived at by Mr. Bowditch and Mr. Joyce.

I now come to a matter which is far more conjectural. If the same calculation is applied to the date 9-9-16-0, 1 Ahau 18 Kayab, found on p. 24 of the Dresden Codex, it is found to be 13 June 94 A.D. Now, this date appears to be connected with the Venus cycle occurring on the right of the same page, and on p. 50 the same date is made the end of the series relating to the synodic revolution of Venus, and as it there follows immediately after the distance number of eight days, the length of time in which Venus is invisible at inferior conjunction, it would appear that the conjunction took place shortly before this time. If we assume that the initial series value of this date on p. 50 is the same as that of the same date on p. 24, it would follow that there should have been an inferior conjunction of Venus on or shortly before 13 June 94 A.D. I have no means of verifying this, which is properly a matter for a skilled astronomer to compute, but it is worthy of note that if we calculate back from the transit of Venus of 23 May 1769 (Julian) to 13 June 94 A.D., by dividing the number of days distance between the dates, 611,771 by 583.92, the number of days in a synodic period of Venus, we obtain a remainder of 406.76. Therefore, by this calculation there was a conjunction 406.76 days after 13 June 94, or 177.16 days before it, because 177.16 is the difference between 406.76 and 583.92. Neglecting fractions, there remain 177 days, which is the number given on p. 53a of the Codex for the length of six lunar months. Possibly the intention was to record a date which, according to the calendar, should be the date of a conjunction, but was really six lunar months in error.

There is, however, a more probable explanation. Mrs. Zelia Nuttall (*American Anthropologist*, Vol. 6, No. 4, 1904), has shown that the Venus cycle of 104 years (equal to two calendar rounds) is about five days longer than the true time. This being so, the error in 9-9-16-0 (72 calendar rounds) would be $36 \times 5 = 180$ days, very nearly the 177 days, and the error in 9-9-9-16-0 would be practically the same. If then an inferior conjunction of Venus did in fact occur 177 or 180 days before 13 June 94 A.D., there would have been an excellent reason for the Mayas to record specially this date, if on it their official Venus calendar was 180 days too late, that being the number of days required to correct the Venus calendar since the mythical zero point, 4 Ahau 8 Cumhu, if they used a correction of five days to each Venus cycle, and also being half the number of days in a *tun*. It would be parallel to the instances shown by Mr. Bowditch of the record of dates on which the solar calendar was a definite amount in error. Considering the wonderful astronomical knowledge of the Mayas, we may be fairly certain that they noticed the error of their Venus calendar, and used a correction. If the date 9-9-9-16-0, 1 Ahau 18 Kayab, has this meaning, the calculation of the amount of the error of the Venus cycle must have been made while that date was still in the future, and in fact, it must have been made at the same time as the calculation relating to the date 9-9-16-0-0 4, Ahau 8 Cumhu. This would make it all the more probable that the calculated error was 180 days, while the true error on the former of these dates was 177 days or less. It is to be noted that on p. 24 of the Codex these two dates are connected by the secondary series 6-2-0, as if to connect the Venus and solar computation.

If the theory put forward in this paper as to the origin of the zero point of Maya chronology is sound, it will show a remarkable parallel to the Hindu Kali Yuga era of 3102 B.C., which has been shown also not to be a historical date, but one arrived at by calculating back till a date was reached which would be the commencement of a cycle harmonising lesser cycles (Dr. J. F. Fleet, in *Journ. Roy. Asiatic Soc.*, April, 1911). It is curious that another parallel can be found between the Hindu method of reckoning by "expired" instead of current time periods and the Maya reckoning by elapsed time.

TABLE OF MAYA DATES WITH EQUIVALENTS IN JULIAN CALENDAR.

						B.C.
The normal date or zero point-	4 Ahau	8 Cumhu	-	-	13 January	3642
1- 0-0-0-0 - - -	3 "	13 Chen	-	-	14 April	3248
2- 0-0-0-0 - - -	2 "	3 Uayeb	-	-	15 July	2854
3- 0-0-0-0 - - -	1 "	8 Yax	-	-	14 October	2460
4- 0-0-0-0 - - -	13 "	13 Pop	-	-	14 January	2065
5- 0-0-0-0 - - -	12 "	3 Zac	-	-	15 April	1671
6- 0-0-0-0 - - -	11 "	8 Uo	-	-	15 July	1277
7- 0-0-0-0 - - -	10 "	3 Zac	-	-	15 October	883
8- 0-0-0-0 - - -	9 "	3 Zip	-	-	14 January	488
8- 1-0-0-0 - - -	7 "	8 Pax	-	-	1 October	469
8- 2-0-0-0 - - -	5 "	8 Zac	-	-	18 June	449
8- 3-0-0-0 - - -	3 "	8 Xul	-	-	5 March	429
8- 4-0-0-0 - - -	1 "	8 Pop	-	-	21 November	410
8- 5-0-0-0 - - -	12 "	13 Kankin	-	-	8 August	390
8- 6-0-0-0 - - -	10 "	13 Chen	-	-	25 April	370
8- 7-0-0-0 - - -	8 "	13 Zodz	-	-	10 January	350
8- 8-0-0-0 - - -	6 "	18 Kayab	-	-	27 September	331
8- 9-0-0-0 - - -	4 "	18 Ceh	-	-	14 June	311
8-10-0-0-0 - - -	2 "	18 Yaxkin	-	-	1 March	291
8-11-0-0-0 - - -	13 "	18 Uo	-	-	16 November	272
8-12-0-0-0 - - -	11 "	3 Pax	-	-	3 August	252
8-13-0-0-0 - - -	9 "	3 Zac	-	-	20 April	232
8-14-0-0-0 - - -	7 "	3 Xul	-	-	5 January	212
8-15-0-0-0 - - -	5 "	3 Pop	-	-	22 September	193
8-16-0-0-0 - - -	3 "	8 Kankin	-	-	9 June	173
8-17-0-0-0 - - -	1 "	8 Chen	-	-	25 February	153
8-18-0-0-0 - - -	12 "	8 Zodz	-	-	12 November	134
8-19-0-0-0 - - -	10 "	13 Kayab	-	-	30 July	114
9- 0-0-0-0 - - -	8 "	13 Ceh	-	-	16 April	94
9- 1-0-0-0 - - -	6 "	13 Yaxkin	-	-	1 January	74
9- 2-0-0-0 - - -	4 "	13 Uo	-	-	18 September	55
9- 3-0-0-0 - - -	2 "	18 Moan	-	-	5 June	35
9- 4-0-0-0 - - -	13 "	18 Yax	-	-	20 February	15
						A.D.
9- 5-0-0-0 - - -	11 "	18 Tzec	-	-	7 November	5
9- 6-0-0-0 - - -	9 "	3 Uayeb	-	-	25 July	25
9- 7-0-0-0 - - -	7 "	3 Kankin	-	-	11 April	45
9- 8-0-0-0 - - -	5 "	3 Chen	-	-	27 December	64
9- 9-0-0-0 - - -	3 "	3 Zodz	-	-	13 September	84
9-10-0-0-0 - - -	1 "	8 Kayab	-	-	31 May	104
9-11-0-0-0 - - -	12 "	8 Ceh	-	-	16 February	124
9-12-0-0-0 - - -	10 "	8 Yaxkin	-	-	3 November	143
9-13-0-0-0 - - -	8 "	8 Uo	-	-	21 July	163
9-14-0-0-0 - - -	6 "	13 Moan	-	-	7 April	183
9-15-0-0-0 - - -	4 "	13 Yax	-	-	23 December	202
9-16-0-0-0 - - -	2 "	13 Tzec	-	-	9 September	222
9-17-0-0-0 - - -	13 "	18 Cumhu	-	-	27 May	242
9-18-0-0-0 - - -	11 "	18 Mac	-	-	11 February	262
9-19-0-0-0 - - -	9 "	18 Mol	-	-	29 October	281
10- 0-0-0-0 - - -	7 "	18 Zip	-	-	16 July	301

A.D.

10- 1-0-0-0	-	-	5	Abau	3	Kayab	-	2	April	321
10- 2-0-0-0	-	-	3	"	3	Ceh	-	18	December	340
10- 3-0-0-0	-	-	1	"	3	Yaxkin	-	4	September	360
10- 4-0-0-0	-	-	12	"	3	Uo	-	22	May	380
10- 5-0-0-0	-	-	10	"	8	Moan	-	7	February	400
10- 6-0-0-0	-	-	8	"	8	Yax	-	25	October	419
10- 7-0-0-0	-	-	6	"	8	Tzec	-	14	July	439
10- 8-0-0-0	-	-	4	"	13	Cumhu	-	29	March	459
10- 9-0-0-0	-	-	2	"	13	Mac	-	14	December	478
10-10-0-0-0	-	-	13	"	13	Mol	-	31	August	498
10-11-0-0-0	-	-	11	"	13	Zip	-	18	May	518
10-12-0-0-0	-	-	9	"	18	Pax	-	2	February	538
10-13-0-0-0	-	-	7	"	18	Zac	-	20	October	557
10-14-0-0-0	-	-	5	"	18	Xul	-	7	July	577
10-15-0-0-0	-	-	3	"	18	Pop	-	24	March	597
10-16-0-0-0	-	-	1	"	3	Moan	-	9	December	616
10-17-0-0-0	-	-	12	"	3	Yax	-	26	August	636
10-18-0-0-0	-	-	10	"	3	Tzec	-	13	May	656
10-19-0-0-0	-	-	8	"	8	Cumhu	-	29	January	676
11- 0-0-0-0	-	-	6	"	8	Mac	-	16	October	695
11- 1-0-0-0	-	-	4	"	8	Mol	-	3	July	715
11- 2-0-0-0	-	-	2	"	8	Zip	-	20	May	735
11- 3-0-0-0	-	-	13	"	13	Pax	-	5	December	754
11- 4-0-0-0	-	-	11	"	13	Zac	-	22	August	774
11- 5-0-0-0	-	-	9	"	13	Xul	-	9	May	794
11- 6-0-0-0	-	-	7	"	13	Pop	-	24	January	814
11- 7-0-0-0	-	-	5	"	18	Kaukin	-	11	October	833
11- 8-0-0-0	-	-	3	"	18	Chen	-	28	June	853
11- 9-0-0-0	-	-	1	"	18	Zodz	-	15	March	873
11-10-0-0-0	-	-	12	"	3	Cumhu	-	30	November	892
11-11-0-0-0	-	-	10	"	3	Mac	-	17	August	912
11-12-0-0-0	-	-	8	"	3	Mol	-	4	May	932
11-13-0-0-0	-	-	6	"	3	Zip	-	20	January	952
11-14-0-0-0	-	-	4	"	8	Pax	-	7	October	971
11-15-0-0-0	-	-	2	"	8	Zac	-	24	June	991
11-16-0-0-0	-	-	13	"	8	Xul	-	11	March	1011
11-17-0-0-0	-	-	11	"	8	Pop	-	26	November	1030
11-18-0-0-0	-	-	9	"	13	Kaukin	-	13	August	1050
11-19-0-0-0	-	-	7	"	13	Chen	-	30	April	1070
12- 0-0-0-0	-	-	5	"	13	Zodz	-	15	January	1090
12- 1-0-0-0	-	-	3	"	18	Kayab	-	2	October	1109
12- 2-0-0-0	-	-	1	"	18	Ceh	-	19	June	1129
12- 3-0-0-0	-	-	12	"	18	Yaxkin	-	6	March	1149
12- 4-0-0-0	-	-	10	"	18	Uo	-	21	November	1168
12- 5-0-0-0	-	-	8	"	3	Pax	-	8	August	1188
12- 6-0-0-0	-	-	6	"	3	Zac	-	25	April	1208
12- 7-0-0-0	-	-	4	"	3	Xul	-	10	January	1228
12- 8-0-0-0	-	-	2	"	3	Pop	-	28	September	1247
12- 9-0-0-0	-	-	13	"	8	Kaukin	-	15	June	1267
12-10-0-0-0	-	-	11	"	8	Chen	-	2	March	1287
12-11-0-0-0	-	-	9	"	8	Zodz	-	17	November	1306

									A.D.
12-12-0-0-0	-	-	-	7	Ahau	13	Kayab	-	4 August 1326
12-13-0-0-0	-	-	-	5	"	13	Ceh	-	21 April 1346
12-14-0-0-0	-	-	-	3	"	13	Yaxkin	-	6 January 1366
12-15-0-0-0	-	-	-	1	"	13	Uo	-	23 September 1385
12-16-0-0-0	-	-	-	12	"	18	Moan	-	10 June 1405
12-17-0-0-0	-	-	-	10	"	18	Yax	-	25 February 1425
12-18-0-0-0	-	-	-	8	"	18	Tzec	-	12 November 1444
12-19-0-0-0	-	-	-	6	"	3	Uayeb	-	30 July 1464
13- 0-0-0-0	-	-	-	4	"	3	Kankin	-	16 April 1484
13- 1-0-0-0	-	-	-	2	"	3	Chen	-	2 January 1504
13- 2-0-0-0	-	-	-	13	"	3	Zodz	-	19 September 1523
13- 3-0-0-0	-	-	-	11	"	8	Kayab	-	6 June 1543
13- 4-0-0-0	-	-	-	9	"	8	Ceh	-	21 February 1563
13- 5-0-0-0	-	-	-	7	"	8	Yaxkin	-	8 November 1582
13- 6-0-0-0	-	-	-	5	"	8	Uo	-	26 July 1602
13- 7-0-0-0	-	-	-	3	"	13	Moan	-	12 April 1622
13- 8-0-0-0	-	-	-	1	"	13	Yax	-	28 December 1641
13- 9-0-0-0	-	-	-	12	"	13	Tzec	-	14 September 1661
13-10-0-0-0	-	-	-	10	"	18	Cumhu	-	1 June 1681
13-11-0-0-0	-	-	-	8	"	18	Mac	-	16 February 1701
13-12-0-0-0	-	-	-	6	"	18	Mol	-	3 November 1720
13 13-0-0-0	-	-	-	4	"	18	Zip	-	21 July 1740
13-14-0-0-0	-	-	-	2	"	3	Kayab	-	7 April 1760
13-15-0-0-0	-	-	-	13	"	3	Ceh	-	24 December 1779
13-16-0-0-0	-	-	-	11	"	3	Yaxkin	-	10 September 1799
13-17-0-0-0	-	-	-	9	"	3	Uo	-	28 May 1819
13-18-0-0-0	-	-	-	7	"	8	Moan	-	12 February 1839
13-19-0-0-0	-	-	-	5	"	8	Yax	-	30 October 1858
14- 0-0-0-0	-	-	-	3	"	8	Tzec	-	17 July 1878
14- 1-0-0-0	-	-	-	1	"	13	Cumhu	-	3 April 1898
14- 2-0-0-0	-	-	-	12	"	13	Mac	-	19 December 1917

RICHARD C. E. LONG.

REVIEW.

History.

Rawlinson.

Intercourse between India and the Western World, from the Earliest Times to the Fall of Rome. By H. G. Rawlinson, M.A., I.E.S. Cambridge University Press, 1916. **71**

Mr. Rawlinson is already well known to Orientalists by his work on *Bactria* and other essays. He has now attempted a more difficult task, a consecutive survey of the intercourse between India and the West in ancient times, up to the fall of the Roman Empire. As far as it is possible to ascertain, no work based on recent authorities has dealt with this subject as a whole, although parts of it have been investigated from time to time. Yet it is of the greatest importance to the civilised world; now as of old the control, both military and economical, of the trade-routes between Europe and the East is the subject of contest, and the rivalry between land and sea-routes is no less keen than it was in the days of Solomon, of Alexander, or of Albuquerque.

The lines followed by traffic may be classed (1) as land-routes, including those mainly if not entirely confined to the land; (2) the route by the Persian Gulf, which was nearly equally divided between land and sea; and (3) that by the Red Sea, which, except for the short transit from that sea to the Mediterranean, was purely a sea-route; and (4) the entirely maritime line round the Cape of Good Hope, which, although dreamed of by Carthaginians and Greeks, was never in practical use before the time of Vasco de Gama.

In the earliest days the caravan-routes leading to the Black Sea or to the Syrian Coast by various lines seem to have been most used. How far the sea route to the Persian Gulf came into competition with these it is difficult to decide. Perhaps the evidence is insufficient to justify Professor Rawlinson in assuming that intercourse between the Hittites and the Aryans of the Panjāb was carried on by the Euphrates, the Persian Gulf, and the Indus. The overland route seems on the whole more likely to have been followed; for the difficulty of carrying on trade by the river and sea-route would have been enormous, and the passing allusions to Babylon do not necessarily imply that the sea-route was followed. But it is undoubtedly possible that the traffic between the emporium of Obolla, at the mouth of the Shatt-ul-'Arab, and South India, then, as afterwards, followed the sea-route, as the land-routes could not well compete with it.

It is regarding the trade with the ports of Western India that we have the greatest amount of information, and we find that this trade tended more and more to follow the line of the Red Sea from the Egyptian ports or from those on the Gulf of Akaba. The trade of Tyre and Palestine, barred from the Persian Gulf by the Assyrian power, for a time adopted this route, and the Ptolemies in Egypt, and after them the Roman Empire, followed the same course, the line of least resistance. Of this trade we have an accurate picture in the *Periplus*, which shows us how all traffic centred in a port at or near Aden, and was in the hands of the Arab sailors who brought the products of the East to that emporium and there exchanged them for the goods of the West.

During the prosperous days of the Roman Empire the land-routes from the Persian Gulf to the shores of the Mediterranean also carried on a flourishing trade, but these depended on the maintenance of a strong Government and were also no doubt affected by the progressive desiccation of the country between Syria and Mesopotamia, which brought about the gradual disuse of the caravan-routes across the desert from Petra and Palmyra, and the adoption of the more northerly line from Antioch to the Euphrates, corresponding very closely with that now followed by the Baghdad railway. This route, however, was more exposed than the more southern one, to the disturbance caused by wars and invasions.

After the break up of the Roman Empire both land and sea-routes fell into the power of the Empire of the Khalifs; Europeans lost all control over the trade, and a period commenced (which lasted until the Portuguese rounded the Cape of Good Hope), during which European trade with the East existed only by the favour of the Musalman rulers of Damascus, Baghdad, or Egypt. By payment of heavy duties Venice and Genoa were admitted to the Mediterranean ports under these rulers, who, on their part, obtained a very large revenue by tolerating this trade. This was especially the case with the Mamlūk Sultans of Egypt, through whose territory the whole of the Red Sea trade passed.

Mr. Rawlinson, however, does not extend his survey beyond the fall of Rome, and therefore does not deal with these later developments. His work is a full and interesting summary of the history of the dealings between East and West in the earlier periods, in the time of Alexander and his successors, especially the Ptolemies, and during the existence of the Roman Empire. In the earlier periods perhaps

sufficient attention is not given to the intercourse between Persia and India in the time of the Achemenians, the importance of which is gradually coming to be more fully realised. With what may be called the Greek period Mr. Rawlinson deals very fully. In Chapter III he gives an excellent account of the Maurya Empire in the days of Megasthenes, and in Chapter IV of the Successors of Alexander, who for so long maintained a kingdom, or rather a series of kingdoms, in the Panjāb and Afghānistan. He has already treated of this part of his subject in a separate volume (*Bactria*, London, 1912). The Saka and Kushan dynasties which followed hardly receive sufficient space, for although they cannot be considered as in any way Western races, yet their kingdoms, closely connected with Parthia, were the most important link at that period in the chain which connected India with the West. This was especially the case with Kanishka, whose coinage shows the cosmopolitan interests of his dominions, including, as it does, representations of Persian, Greek, Buddhist, and Brahmanical divinities.

The fullest and most satisfactory part of Mr. Rawlinson's work is that dealing with the intercourse with Egypt under the Ptolemies and with the Roman Empire. Here the result of the accumulated information resulting from modern investigations has been brought together and combined into a consecutive account, which is probably a better guide to this difficult period than any other in existence. The account given on pp. 112-124 of the *Periplus* and what can be learnt from it, may be referred to as a model of what such an account should be.

In a work dealing with such a multiplicity of subjects it is inevitable that there should be differences of opinion on some points. Space does not permit allusion to many, but one or two mistakes, or what appear to be such, may be pointed out. On p. 117 the author refers to Surāshtra as a name "still surviving in Sūrat." It would have been more correct to identify Saurāshtra with Sōrath in the Kāthiāwar peninsula, and to point out that Sūrat probably represents only the name, but not the country to which it applied. On p. 14, in an argument in favour of the derivation of several western names from South Indian languages, the author includes the words for "rice," and says: "The Tamil *arisi* becomes *aruz* in Arabian and *ᾱρυζα* in Greek." This derivation, first advocated by Caldwell (*Grammar of the Dravidian Language*, p. 92), cannot be accepted as satisfactory. It would be better to seek for the origin of the European names in the Sanskrit *vrihi*, which, in its Iraneān form, would naturally take the form *vrizi*, a form which has given rise to such modern words as the Persian *birinj* and the Pashto *vrizhe*. Evidently such an Old Persian word would pass easily into the Greek *oryza*, and even the Arabic *ruzz* or *aruzz* should most probably be referred to the Greek or Persian forms.

The frontispiece of the volume is a reproduction of a sculpture from Boro-Budūr, in Java, which represents a scene described as "A Hindu Ship arriving at Java." But can it be correctly so described? The scene is evidently an illustration of a Jātaka story, possibly the *Mahājanaka Jātaka*, where the hero's ship is driven ashore in a storm. In any case the sculpture, like all at Boro-Budūr, is purely Buddhist. Gautama Buddha himself appears among worshippers in the upper panel. The ship represented is, no doubt, one of a kind familiar to the sculptor, but is there any ground for identifying it as "Hindū"? May it not, for instance, have been Arabian?

Needless to say, even if these criticisms are justified, the value of the book as a whole is not affected. It is a work of great importance, and will, I think, be found indispensable as an introduction to its fascinating subject.

M. LONGWORTH DAMES.



IVORY COVER, BENIN.

(Diam. 6.7 in. = 17 cm.)

A CARVED IVORY OBJECT FROM BENIN.

ORIGINAL ARTICLES.

Africa: Art.

With Plate I—J.

Read.

On a Carved Ivory Object from Benin in the British Museum.**72***By Sir C. Hercules Read.*

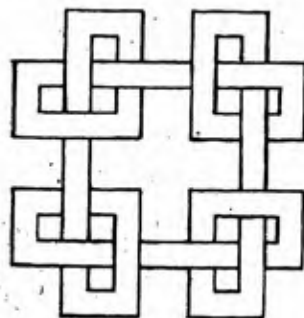
It is but rarely that works of art from Benin have appeared in the market during the past few years. The endless streams of objects that were poured into Europe as a consequence of the punitive expedition have stopped, and the objects themselves are for the time at rest in collections, public or private. In ten years or more these latter change hands, and the specimens become the ordinary currency of the dealer and collector. In this way the curious ivory shown in the Plate has come into my possession. The owner had a somewhat grim history that the carving was used in human sacrifices, the head of the victim being impaled on a spike passing through the hole in the middle. It seemed, however, to be of sufficient interest to find a place in the national collection, where, thanks to the generosity of our Fellow, Mr. Louis Clarke, it will now remain.

At first sight the general appearance of the piece hardly suggests African art, and, but for one feature, it might have been somewhat of a puzzle. This feature is the human head wearing a hat, and to anyone familiar with the more ancient examples from Benin, it would at once be clear that this piece had its origin there. Its form and make suggest that it has served as the cover of a cup or vase such as is figured in the British Museum volume,* though the latter is not quite so large, nor, on the inner side, is it so well finished, but the flange around the lower edge of the present specimen shows fairly conclusively the purpose it has served. It is in two pieces, with the junction across the middle, and now held together by copper wires. Though suggestive of a fracture, a closer examination shows that the cover has been originally made from two pieces of tusk, joined together much more neatly than at present, viz., by rivets of copper which were masked by the ornament and practically unseen. Great care has been bestowed on the finish of the work, and though the precision of the lines would suggest the lathe, it is certain that the whole has been executed by free hand. The underside is hollowed and polished, and the contour of the inner part follows very nearly that of the ornamented exterior. The two views shown in the Plate render it unnecessary to go into great detail in describing the decoration. The whole of the outer side has been engraved, leaving the design in relief, while the engraved portions were originally set with brass inlay. The greater part of this metal has now disappeared, not a surprising circumstance seeing that it was held in place, not by rivets, but by some adhesive substance. On all the sections, however, enough remains to prove that the whole was ornamented in the same way.

The designs are not all of the known Benin types; in fact, the human face above mentioned is the only feature that can be called typical. The scheme consists in a horizontal band filling the external face of the cover and containing two designs, each repeated six times alternately; above and below is a cable band. The inner side of the middle of the cover is plain, except for four vertical channels, which, like the rest, have once been filled with metal inlay. The two designs I have mentioned are: (1) The human head, already mentioned, drawn in a somewhat diagrammatic style, but very clearly intended to represent a full-face Portuguese wearing a low helmet and with long, straight hair and beard. This is a type thoroughly familiar, and seen in every collection that contains the metal panels with reliefs. The precise type seen in this cover may be compared with those shown in the Museum album, Pl. XIII, 1-3. The metal inlay in these heads has survived better than the rest.

* Read and Dalton: *Antiquities from . . . Benin*. 1899. Pl. IV, 2.

having been more deeply set and hammered into position. (2) A rectangular fret filling up the whole of the field in each section. On the carving itself the meaning of this fret is not very clear, but on analysis it turns out to be a square with a simple knot at each angle, as may be seen from the annexed figure. This is no doubt related to the plaited designs common on Benin carvings and castings, and is certainly near kin to the knots of the same general design on a stool in General Pitt-Rivers' collection, figured in his work, Pl. 41, 318. The cable bands which bound these designs above and below are executed with unusual vigour, and there is also a great decorative quality in the fretted panels, to which the diagrammatic heads make a pleasing contrast.



Another feature that adds not a little to the charm of the piece is a faint green tint, due to the presence of the brass inlays. For some reason this is much stronger on the upper edge than on the sides, and this part of the carving, moreover, is very much worn, the cable pattern being almost rubbed smooth in parts—as if it had been habitually standing with the upper edge downwards. As a matter of fact the whole surface shows signs of considerable use, and on that ground alone one would be inclined to set down the object as of considerable age.

There is every likelihood of its being three or more centuries old. The type of European shown is in all probability of the early seventeenth century, as the panels with similar heads almost certainly are. What evidence there is, extraneous or inherent, points to some such date.

It is hard to conceive the precise purpose of a cover of this peculiar shape. One may assume that the carefully-made hole in the centre was for dropping some small objects into the vessel to which it served as a cover, but at present its specific purpose is a mystery. I have looked through all the available books on Benin antiquities, and Mr. Ling Roth has also made diligent search, but with no useful result. The only piece of the kind I have found is in General Pitt-Rivers' *Antique Works of Art from Benin* (1900), where, on Pl. 30, Fig. 225, is an object of the same shape, but in brass, and almost of the same size, the brass example being 6.9 inches wide and the ivory one 6.7 inches. The main part of the decoration of the former is, however, of quite a different character, but it may not be without significance that it is confined within two cable bands, poorer in execution, but essentially the same as the borders on the ivory cover. General Pitt-Rivers could only describe his specimen as of unknown use, and does not even make any suggestion as to its purpose. That this was the same in both cases is almost certain, although there is no sign of a flange on the lower edge of the brass cover.

C. HERCULES READ.

Solomon Islands: Fish-hooks.

Woodford.

Fish-hooks from the Solomon Islands. By C. M. Woodford, **73**
C.M.G.

In looking through my collection I have come across some fish-hooks from the Solomon Islands and elsewhere, and as some of them are of unusual form, I have thought that rough illustrations of them might not be without interest.

None of the hooks illustrated show any trace of a barb, and I do not remember having seen in the Solomons barbed fish-hooks of native manufacture, although it might be expected that the natives would have adopted the idea from the white man's fish-hook, with which they are now well supplied.

Fig. 1.—This is a hook of turtle-shell, and appears a clumsy enough implement in itself, unless it is intended to be both hook and bait in one; it may be meant to represent a worm, as is mentioned by Ellis in connection with hooks from Tahiti,* or it may be a portion only of a complete lure, similar to the one illustrated in Fig. 5.

Fig. 2.—A hook of black pearl-shell, with irridescence on one side of the bend of the hook only. This hook has a rudimentary representation of a fish on the upper side, and may be intended to be used without bait as an artificial lure.

Fig. 3.—A hook of white iridescent pearl-shell, with a figure of a small fish on the upper side, of more finished character than the fish represented in Fig. 2. Probably a complete lure in itself.

Fig. 4.—Is a lure of white pearl-shell with a hook of turtle-shell lashed on, and two white native shell beads, one red and one blue glass bead, attached as trailer with a piece of red wool. It is of the type commonly used throughout the Pacific for catching bonito, and is preferred by the native to a barbed hook. Without a barb to the hook one would suppose there would be great risk of losing the fish, but the natives say that it is not so. They are certainly very skilful in catching bonito with the type of hook illustrated. The specimens of this type of hook from the Solomons compare very unfavourably, both in point of size

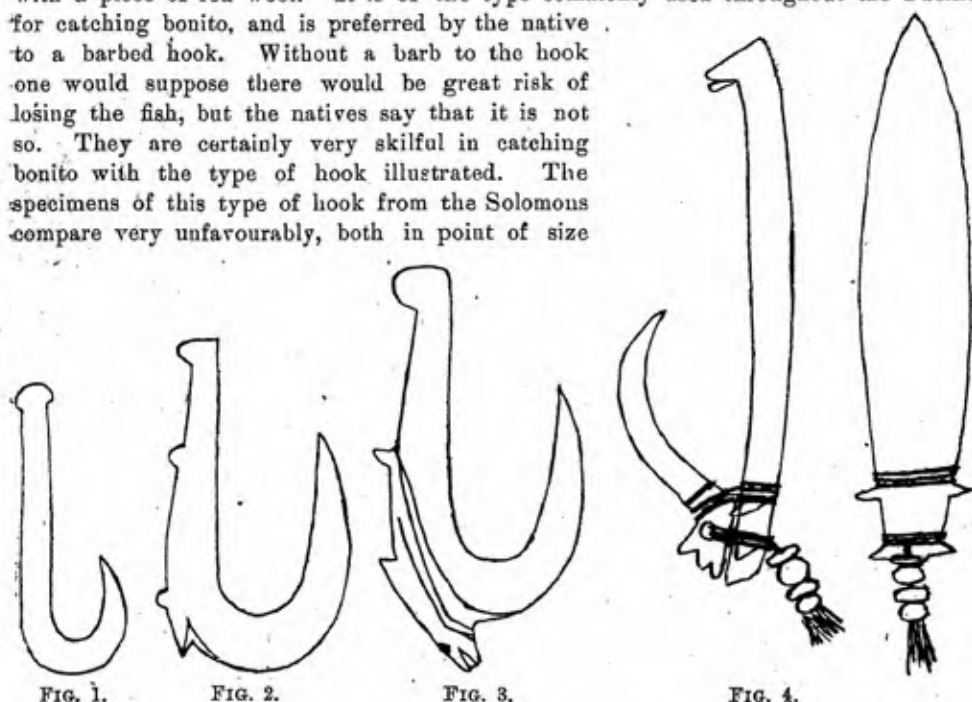


FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

and finish, with those used in the Gilbert and Ellice Groups and the Polynesian Groups to the eastward. In the Gilbert Group they sometimes reach a length of 4 or 5 inches, and special hooks of superior shape and finish are even known by name. When I was in the Gilbert Group in 1884, I was told that choice specimens of these hooks were sometimes sent as presents from island to island by the chiefs attached to the wing of the frigate-bird. I certainly saw at Kuria two captive frigate-birds, seated on perches, which belonged to the King of Apemama. When wild birds were seen, the captives were sent up as decoys at the end of a long string. Some fish was thrown down as bait, and when the captive birds settled to eat it, the wild birds joined them. When they were eating the fish, a string with a stone at the end of it was thrown over them in which their wings became entangled. I actually saw the attempt made to catch a wild bird. Reference to

* *Polynesian Researches*, Vol. II, chap. x.

a similar custom in the Ellice Group is made by Dr. Turner, of the London Missionary Society,* who relates that when he was at the island of Funafuti, in the native pastor's house, on a Sunday afternoon, a frigate-bird arrived with a note from another pastor at Nukufetau. It was a foolscap 8vo. leaf, done up inside a light piece of reed, plugged with a bit of cloth, and attached to the wing of the bird. It was dated on the previous Friday. The distance from Nukufetau to Funafuti is about 70 miles.

Fig. 5.—This is a very curious specimen. It consists of a turtle-shell hook, somewhat similar to Fig. 1. To this is attached by lashings a piece of porous red coralline, or shell, roughly shaped to represent a prawn. It is rendered more realistic by the addition of four pieces of vegetable fibre, representing legs or antennae.

Figs. 6 and 7.—Small lures of lustrous pearl shell. They are used for taking the small fish, resembling sprats, which at certain times of the year congregate in shoals in shallow water near the shore. The lures are used with a light rod of bamboo about 6 feet long, and a fine line of about the same length. The lure is dropped about a foot deep into the water and drawn up to the surface with a jerking

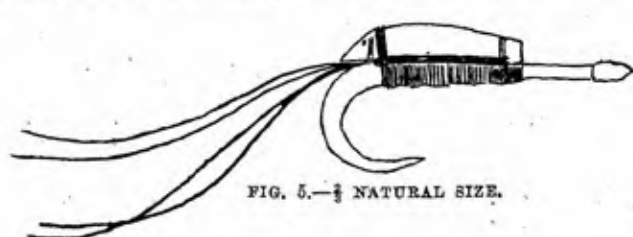
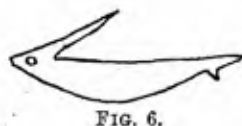
FIG. 5.— $\frac{1}{2}$ NATURAL SIZE.

FIG. 6.



FIG. 7.

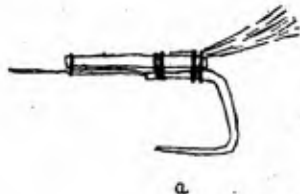


FIG. 8.

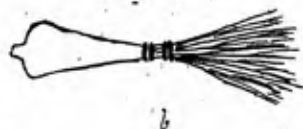


FIG. 9.

motion. When a fish is hooked it is skilfully dropped direct from the hook into a basket held ready for the purpose in the fisherman's other hand.

Fig. 8.—An ordinary wire nail adapted for use as a fish-hook. It will be noticed that the point is much recurved, which obviates the necessity of barbing.

Fig. 9, A and B.—Shows a lure from the Gilbert Group. In this case the hook is also made of a nail. The top of the lure, to which the hook is lashed, is made of black pearl shell and the tail of white feathers. The almost right angle bend of the hook is curious.

CHARLES M. WOODFORD.

Central America: Chronology.

The Maya and Christian Eras. By Richard C. E. Long.

Since the foregoing article was written (MAN, 1918, 70) I have seen **74**
Past and Future Eclipses (London, 1896), by Rev. S. J. Johnson, and have been

* *Samoa a Hundred Years Ago*. Macmillan, 1884, p. 282, chap. xxiii.

able to make some further calculations. The dates of eclipses following are all taken from his book.

On pp. 51-58 of the Dresden Codex is a series of numbers relating to the revolutions of the moon, depending on the periods of 11,958 and 11,960 days, of which the zero points are the days 11 Manik, 12 Lamat, and 13 Muluc. The number 11,960 also appears on pp. 51a-52a as the difference of a series having as zero points 12 Lamat, 1 Akbal, 3 Eznab, 5 Ben, and 7 Lamat, which series is also concerned with the lunar revolutions. It therefore appears that the day 12 Lamat is connected with the moon, and as this day is only found as the terminal date of an initial series twice in the Codex, namely, on pp. 51 and 52, the very pages on which these lunar series occur, it is worth inquiring if the dates of these initial series fell on either full or new moon. The date on p. 51 is 10-19-6-1-8, 12 Lamat 6 Cumhu (25 January 682 A.D.). Now there was an eclipse of the moon (i.e., full moon) on 16 April 683 A.D. The distance between these dates is 446 days, which divided by 29.53, the mean length in days of a lunation, leaves a remainder of 3.05. Therefore, the initial series date fell within three days of the full moon. This close correspondence furnished a further proof of the accuracy of the method of correlation of Maya dates. There may not be even an error of three days, because the series on pp. 51-58 seems itself to allow for an adjustment of the lunar series by two or three days. If that be so the correspondence is perfect. The date on p. 52 is 9-16-4-10-8, 12 Lamat 1 Muan (15 March 227 A.D.). A similar calculation from the eclipse of the sun (new moon) on 12 April 237 A.D. shows that this initial series date fell 4.52 days before full moon. That is not so good a correspondence. But the matter may be carried further. There is on the same page the date 9-16-4-11-3, 1 Akbal 16 Muan (30 March 227 A.D.). This is only 15 days later, and falls 19.04 days before full moon, or 4.28 days before new moon. There is also on this page the date 9-16-4-11-18, 3 Eznab 11 Pax (14 April 227 A.D.). That is 15 days after the last, and falls 4.05 days before full moon. Here again, allowing for the adjustment of 3 days, there would be only one day's error. The distances of 15 days separating the dates are no doubt taken as the nearest even number of days to half a lunar month. The intention of the Maya scribe seems to have been to note the day 12 Lamat, which ought officially to have fallen on the full moon, but as, in fact, it was somewhat in error, he reckoned forward two officially estimated half lunations to a date which came very near the true full moon.

It seemed worth trying if any of the other initial series in the Dresden Codex have any relation to the moon, and in the following table the distances before full moon of all the remaining series in the Codex are given. In all cases these are obtained by counting the number of days from the nearest eclipse and dividing by 29.53. I have followed the values given by Dr. Forstemann for these series ("Commentary on the Maya Manuscript in the Royal Public Library of Dresden," *Peabody Museum Papers*, Vol. IV, No. 2). This agrees with the list given by Mr. Morley (*op. cit.*, p. 271) except in the third last and the last series. In the third last one he gives 10-11-3-18-4, which must be an error, as it contains 18 in the *uinal* place, and in the last one he gives 8-16-19-10-0, thus agreeing with the Codex and not accepting Dr. Forstemann's correction. This would be 10 Abau 8 Pop (18 September 154 B.C.), and 25.44 days before full month.

Probably this list shows a connection between some at least of these dates and the moon, although, as they do not reach any of the days in the Maya calendar associated with the lunar series, a connection would hardly be expected. Still it is rather remarkable that 14 out of 20 come within a distance of 3 days or 15 days (half a lunation) or 18 days (15+3).

LIST OF DATES.

Page of Codex.	Initial Series.	Distance before Full Moon in Days.
24	9-9-9-16-0, 1 Ahau 18 Kayab (13 June 94 A.D.)	- 3.07
24	9-9-16-0-0, 4 Ahau 8 Cumhu (21 June 100 A.D.)	- 17.82
31 and 62	8-16-14-15-4, 4 Kan 17 Yaxkin (26 January 158 B.C.)	- 8.35
31 and 63	8-16-3-13-0, 4 Ahau 8 Mol (9 February 169 B.C.)	- 25.8
31 and 63	10-13-13-3-2, 4 Ik 15 Zac (14 October 570 A.D.)	- 15.63
43	9-19-8-15-0, 4 Ahau 13 Zip (14 July 290 A.D.)	- 24.46
45	8-17-11-3-0, 4 Ahau 13 Chen (27 February 142 B.C.)	- 10.17
51	8-16-4-8-0, 4 Ahau 3 Zip (26 October 169 B.C.)	- 3.04
52	9-19-5-7-3, 7 Lamat 1 Muan (28 February 287 A.D.)	- 16.2
58	9-18-2-2-0, 4 Ahau 8 Muan (12 March 264 A.D.)	- 2.28
58	9-12-11-11-0, 4 Ahau 13 Muan (14 April 155 A.D.)	- 20.61
62	8-16-15-16-1, 4 Imix 9 Mol (7 February 157 B.C.)	- 15.59
63	8-11-8-7-0, 4 Ahau 18 Yaxkin (22 February 263 B.C.)	- 0.78
63	10-13-3-16-4, 7 Kan 2 Chen (24 August 553 A.D.)	- 15.52
70	9-13-12-10-0, 4 Ahau 8 Chen (5 December 175 A.D.)	- 18.77
70	9-19-11-13-0, 4 Ahau 3 Uayeb (19 May 293 A.D.)	- 18.01
70	10-17-13-12-12, 4 Eb 5 Pop (26 February 650 A.D.)	- 24.29
70	10-11-4-0-14, 9 Ix 7 Zip (11 May 522 A.D.)	- 15.41
70	8-6-16-12-0, 4 Ahau 13 Kayab (28 September 354 B.C.)	3.5
70	8-6-19-10-0, 4 Ahau 18 Kankin (3 August 351 B.C.)	- 0.03

The period of 11,960 days has been shown by Dr. Forstemann to relate to the movements of Jupiter as well as of the moon, being nearly equal to 30 synodic periods of Jupiter. The same days of the tonalamatl, the 260-day period, which are connected with this series should therefore also be connected with Jupiter as well as the moon, and the initial series ending in these days should show dates having a relation to that planet's movements. In this again I am unable to make the astronomical computation, but by counting back 616,912 days, the distance from the conjunction of Jupiter on 19 March 1916 (Julian) to the date 9-16-4-10-8, 12 Lamat 1 Muan (15 March 227 A.D.), on p. 52 of the Codex, and dividing by 398.867, the length of the synodic period of Jupiter, the remainder is 263.618. This would show that a conjunction took place 263.618 days after the terminal date of the initial series. It is very remarkable how close the result is to 260, the number of days in the tonalamatl. The difference of 3 or 4 days would be probable enough as an error of observation, and there would have been a good reason for the Mayas to have noted a date on which their official Jupiter calendar was one whole tonalamatl in error. The error was such that the conjunction would again fall on 12-Lamat, the calculated day of the tonalamatl, though not on the calculated day of the 11,960-day period. The Codex, too, seems to confirm this, because in the ascending series on pp. 51a-52a, the terms of the series after the first are all multiples of 11,960 with two exceptions. One of these exceptions is the tenth term, which is 2-11-10-11-0, or 31 times 11,960 plus 260 (Bowditch: *The Numeration, &c.*, p. 49). That is to say, we have a series composed of multiples of the estimated synodic periods of Jupiter, with an addition in one place of 260 days, which is itself approximately the error by which the initial series date connected with the Jupiter periods differs from the true time of the planet's conjunction. The other exception in the series is the sixth term, which is 9-19-12-0, or 6 times 11,960 plus 120. Now Dr. Forstemann holds that the Mayas estimated the synodic

period of Jupiter at 398 days. This would make 30 synodic periods equal 11,940 days, and so make the calculated (not the true) error of the 11,960-day period be 20 days. Therefore the error in 6 periods of 11,960 days would be the 120 days which we find added when 6 periods are reached in the series. The ninth term is 1-9-18-0-0, or 18 times 11,960, so that the difference between this and the tenth term is 13 periods plus 260 days, which latter is the error in 13 periods. On the whole the confirmation is very striking.

I have calculated in the same way the distances from the conjunction of the other initial series ending in days associated with the period of 11,960 days, but no result of value appears except in the date 9-16-4-11-18, 3 Ezrab 11 Pax (14 April 227 A.D.). If to this be added 502 days, the distance of the first picture from the beginning in the series on pp. 51-58, the date reached is 9-16-6-1-0, 11 Abau 3 Tzec (29 Aug. 228 A.D.). This by calculation would have fallen 130.485 days before a conjunction of Jupiter, that is just half a tonalamatl.

The period of 11,960 days is thought by Dr. Forstemann to refer also to the synodic period of Mercury, so the same initial series might have reference to this planet's movements. Counting back 617,274 days, the distance from the superior conjunction of Mercury on 16 March 1917 (Julian) to 9-16-4-10-8, 12 Lamat 1 Muan (15 March 227), and dividing by 115.877, the number of days in a synodic period of Mercury, leaves a remainder of 113.098, showing the conjunction to have happened about 3 days after it. The date 9-19-5-7-8, 7 Lamat 1 Muan (28 February 287), fell 113.851 days before conjunction or about one day after it, and the date 10-19-6-1-8, 12 Lamat 6 Cumhu (25 January 682), fell 24.839 days before conjunction. This last does not show a connection, but if 502 days, the distance to the first picture, be counted forward, the date reached fell 112.224 days before conjunction or about 2 days after it. None of the other days which are zero points of the 11,960-day series show a connection.

This series is also held by Dr. Forstemann to relate to Saturn, though contrary to Mr. Bowditch's opinion. Counting back from the conjunction of Saturn on 15 June 1915 (Julian), and dividing by 377.75, the synodic period, gives the following results:—

Date.	Distance in Days before Conjunction.
10-19-6-1-8, 12 Lamat 6 Cumhu (25 January 682)	- - 216
10-19-6-1-8, plus 502 days	- - - 91.75
9-16-4-11-3, 1 Akbal 16 Muan (30 March 227)	- - - 131
9-16-4-11-3, plus 502 days	- - - 6.75
9-16-4-10-8, 12 Lamat 1 Muan (15 March 227)	- - - 146

I omit the rest as they show no connection. The distance of 6.75 days is very close, and the distances of 91.75 and 131 are nearly quarter and half of a tonalamatl respectively. The distance of 146 is nearly 148, which is the distance between the second and third terms on page 53a of the Codex.

It appears, then, that of the five initial series dates ending in days associated with the 11,960-day period, there are three falling near the full moon and two near new moon, two show a connection with the conjunction of Jupiter, three with the superior conjunction of Mercury, and three, or perhaps four, with the conjunction of Saturn. This would show the reason why the Mayas specially recorded these lunar dates more than any other full or new moons. It is probably impossible, astronomically, that there could be any larger number of coincidences between the conjunctions of the planets and the moon's phases. It is also noteworthy that the series on page 24 relating to Venus and the summer solstice fell near new and full

moon respectively. Apparently, the general principle of these initial series was to note a date of new or full moon which also was a date of some other astronomical phenomenon, and to take this day as a starting point for an ascending series.

On pages 43b-44b of the Codex is an ascending series which appears to relate to the synodic period of Mars, reckoned at 780 days, and having as its zero point 3 Lamat. A similar series occurs on p. 59, having as its zero point 13 Muluc. Along with this last is another series relating to the same period, and having as zero point 9 Ik. These three series present difficulties compared with those relating to the moon and the other planets. There are no initial series in the Codex ending in the respective days, but two of these days of the tonalamatl are reached by secondary series counted backwards from three different initial series which are near the respective ascending series. The distances between these three dates are none of them even multiples of 780, though the distance between those on page 58 is an even multiple of 260, so that the three dates cannot relate to the same points in the revolution of Mars. But by counting forward in each case the secondary series, which connects the date with its initial series, a date is reached from 61 to 65 days before conjunction. The dates calculated for conjunction are obtained by counting back the number of days from the conjunction of Mars on 15 February 1915 (Julian), and dividing by 779·936, the synodic period. They are as follows:—

Page of Codex.	Date.	Distance before Conjunction.	Secondary Series.
43	9-12-10-16-9, 13 Muluc 2 Zip (6 August 154 A.D.) -	316·86	251
58	9-18-0-12-9, 13 Muluc 2 Mol (18 October 262 A.D.)	573·536	511
58	9-19-7-15-8, 3 Lamat 6 Zodz (27 July 289 A.D.) -	153·768	352

Subtracting the secondary series from the distance before conjunction leaves a remainder in the first case of 65 and in the second case of 62 days. The third secondary series 352 equals 260 plus 92, and subtracting 92 from the distance before conjunction leaves 61. Possibly the Mayas considered that Mars became invisible then. In the last case, of course, the reckoning is to a point one tonalamatl distant from the others in the revolution of Mars. No date appears connected with 9 Ik. The distance forward in the tonalamatl from 13 Muluc to 9 Ik is 113 days. Now the difference between 779·936, the true synodic period of Mars, and 780, the period used by the Mayas, is ·064, so that the error reckoned from the zero point 4 Ahau 8 Cumhu to 9-12-10-16-9, 13 Muluc 2 Zip, would be 113·728 days, that is, less than a day different. If, then, they dropped the 113 days and commenced a new Mars series starting from 9 Ik, their Mars calendar, reckoning from 4 Ahau 8 Cumhu, would be rectified.

The next subject to be inquired into is what relation the days of the Maya tonalamatl bore to the similar periods of the Aztecs and Cakchiquels. The tonalamatl and the lesser periods of 13 days and 20 days of which it is composed resemble our own week in being independent of the seasons and also in having a sacred character. As the days of our week are the same wherever it is used, so that, e.g., Friday falls on the same day throughout the whole area occupied by Christianity and Islam, it might be expected that the tonalamatl days would fall on the same days amongst all the peoples using it, and that the Maya day Imix would fall on the same day as the equivalent Aztec day Cipactli, and the day 1 of the period of 13 days would fall on the same day with each, and so on.

Now, according to Dr. Seler (*Bulletin 28 of the Bureau of American Ethnology*, p. 43) the 13 August 1521 was the Aztec day 1 Coatli. The distance from this date to 11 September 1536 is 5,508 days, which divided by 13 leaves a remainder of 9, and divided by 20 leaves a remainder of 8. The 11 September 1536 was,

therefore, 10 Acatl, the 153rd day of the tonalamatl in the Aztec reckoning. But it was 9 Imix, the 61st day of the tonalamatl in the Maya reckoning, so that the Aztec was 92 days ahead in the tonalamatl, 1 day ahead in the 13-day period, and 12 days ahead in the 20-day period. It is worthy of note that if the difference had been one day less the 13-day periods would have agreed amongst the Aztecs and Mayas and the tonalamatl reckoning would have differed by 91 days, a number which Dr. Forstemann holds was quarter of the ritual year. This number is used as the difference of the series on pp. 31-32 and 62-64 of the Codex. Possibly the difference between the tonalamatls was once 91, and the extra day's difference is connected with the shift of one day in the dominical days in Yucatan. Whether it be 91 or 92 days, the difference is very nearly that between the vernal equinox and the summer solstice. All that can be said is that there appears to be evidence of a shift by a period of days recognised by the Mayas, and that this shows a definite relation between the two calendars.

In the Cakchiquel calendar it can be shown by the dates given by Cyrus Thomas (*22nd Annual Report of the Bureau of Ethnology*) that the 4 October (St. Francis's day) 1556 was the day 7 Camey, the 46th of their tonalamatl. The distance of this date from 11 September 1536, 9 Imix, is 7,328 days, so that the 4 October 1556 would be 10 Muluc, the 49th day of the Maya tonalamatl. Here there is an even more definite relation than in the case of the Aztecs, for the Cakchiquels were 3 days behind the Mayas in the tonalamatl, in the 13-day period and in the 20-day period, while they were 3 days in advance of the Mayas of Yucatan in the dominical days. Again, though the nature of the change cannot be explained, it looks as if the change of dominical days had some connection with it.

The calculation of the exact dates reached at any particular time by the Maya shifting calendar shows that during cycle 9, the great period of Maya civilisation, the months fell in about the same part of the Julian year as in the time of Landa. Cycle 9 lasted from 94 B.C. to 301 A.D., and by counting back 1,460 years (the number of Julian years in which the shifting calendar would completely shift round) from 1542, the year reached is 82 A.D., which fell in *k'atun* 9 of cycle 9, just the most flourishing period. Thus it confirms the opinion of Dr. Forstemann that the calendar in the time of the inscriptions and the Codex was about coincident with that in Landa's time. It was so then; but in the intervening period it had shifted completely round. Again, it confirms Mr. Bowditch's opinion regarding the early dates at Palenque. These are:—

Temple of the Cross	-	12-19-13-4-0, 8 Ahau 18 Tzec (9 May 3649 B.C.).
Temple of the Cross	-	1-18-5-3-2, 9 Ik 15 Ceh (17 March 2888 B.C.).
Temple of the Sun	-	1-18-5-3-6, 13 Cimi 19 Ceh (21 March 2888 B.C.).
Temple of Foliated Cross	-	1-18-5-4-0, 1 Ahau 13 Mac (4 April 2888 B.C.).

Mr. Bowditch assumed that the calendar was coincident with that of Landa, which would make the three last dates cluster round the vernal equinox. The above calculation shows that all four cluster round it, though of course some are not as near as would appear at first sight because they are in the Julian calendar. It is interesting to note that the calendar had shifted round nearly twice between these early dates and those in cycle 9. Hence there appears another reason in addition to those given by Mr. Bowditch for selecting these dates. It would appear that no other dates would both fulfil the conditions of giving half a year of intercalary days as he shows, and also falling near the equinox.

It is a curious fact that the duration of the great Maya period nearly coincided with that of the Roman Empire as distinguished from the Republic, and the duration

of the later Maya culture with that of the Ryzantine Empire, like it a degenerate off-shoot. In view of Professor W. Flinders Petrie's theory of the cyclic character of civilisation, the comparison may have some value. RICHARD C. E. LONG.

Nigeria: Ritual.

Thomas.

(I) **Agricultural Rites.** By N. W. Thomas.

75

The following notes refer in the main to the Edo proper, who occupy the neighbourhood of Benin City, of which the native name is Edo. Yaju, Agbede, Idegun, Wari, Ama, Uzaitui, Auči, and Agenegbodi are in the Kukuruku country, north-east of Edo, Agenegbodij being on the Niger (Obimi is the Edo name), opposite Ida. Ijeba is in the Ora country, west of the Kukuruku, where the language comes nearer that of Benin City, and Okpe is a Kukuruku hill town just on the Yoruba border, where there is great linguistic diversity. Irua is in the Eša (Ishan) country.

(a) FOWL OF THE FARM.

The most interesting farm custom that came to my notice was the ritual connected with the "king's farm," a sort of "garden of Adonis," to which I recorded a parallel in the rice customs of Sierra Leone in a report published in 1916. I found no traces of similar customs in other parts of Nigeria, but no special inquiry was made; and as the widespread nature of the Sierra Leone rite was only apparent when leading questions were addressed to the oldest inhabitants, it is possible that they were originally more widely spread in Nigeria; but it must be remembered that Benin City occupied a peculiar position.

Some distance along the Sapoba road, leading out of Benin City, lay the "King's farm." It was a small plot of ground, not more than 12 feet square perhaps, which was, according to the native custom, changed from year to year, finally returning to the starting point after a certain time. The actual work of the farm was done by the *oxoxugbo* (fowl of the farm), a criminal sent by the king to the Iviemezi, in whose charge he remained, though he lodged in the house of Izoba, and under whose superintendence his work was done.

The first step was for him to clear the ground; this done, the Iviemezi were sent by Okao Aviugbe to the villages to inform the children of the priaces (*ogye*) settled there that the farm was cleared, and that they must come and join the *oxoxugbo* in burning the rubbish. When all was ready the "fowl" planted the yams, seven on one side and seven on the other with a pathway between; it was his duty to watch it night and day till the yams were grown.

When the yams were ripe a ceremony took place, in which the participants were the Iviemezi, the Egaiwo (council of the city) and their servants, and the king. The Egaiwo dressed as though to visit the king, and two of them actually remained in the palace, while four went forward to Izoba's house; whether the servants actually went to the farm I was unable to ascertain; they came back with the Iviemezi, who according to one account went to the farm to report on the crop; but according to their own account visited the farm only twice—when it was cleared and when it was being planted.

On the whole it seems probable that the Iviemezi saw the "fowl" dig the yams, that they then came back, met the servants of the Egaiwo, and proceeded with them to the house of Izoba; here they joined the four members of the Egaiwo, and then went ahead to report to the king, "It is well with the farm," returning to meet the Egaiwo. The king sent *fufu* and drinkables to the farm, all of which had to be consumed there, probably by the Iviemezi. The yams were dug by the *oxoxugbo*, tied up near Izoba's house, and finally taken to the king by the "fowl."

Either before this, or when the yams were in the palace, a diviner drew omens from them as to the prospects of the yam crops in all the kingdom of Edo; if five or six had grown, there would be plenty; if less, famine; if more, abundance and great wealth. The origin of the farm is said to have been in the desire of the king to promote the welfare of the farmers in all his dominions; he sent a man to consult a diviner, who recommended that the king's farm should be made. The diviner was consulted at intervals as to what should be done. Sometimes, not every year, he announced that the farm required a "man with two heads," i.e., a man suffering from elephantiasis of the scrotum; a suitable man was provided, and cut down with a sword upon the king's farm at a time fixed by the diviner; the body of the victim was thrown away in the bush, the *oxoxugbo* proceeded to clear the ground; this would be in the month of March.

The *oxoxugbo* stayed on the farm till he died; he is said to have begged cowries from passers-by.

The king appointed a chief as *iyugbo* (mother of the farm); if he died there would be a famine; but he was not connected with the king's farm, so far as I could discover.

A parallel, though not a very close one, to this custom of the king's farm is found at Ama, near Uzia, in the kingdom of Agbede. When they make Oheli (on August 7th in 1909) they cut a small farm and plant yams in it, perhaps fifty, which are used to sacrifice to Oheli, mixed with ordinary yams. All natives of Ama had to return to the village for this ceremony.

(b) UTU, THE YAM SHRINE.

The new yam customs apart, the most important and widespread agricultural rite is that connected with *Utu*. At Ugo, on the east of Edo, close to the Edo-Ika boundary, when yams are big they get an *iximi* stick and take it to the farm; after planting it in the middle they put one on it and lay before it cutlasses, hoes, a calabash of palm wine, and four kola; *fufu* is sacrificed, kola broken, and all the men eat. When they call on *Utu* they say: "Save these yams for us"; then they wash their hands; all who have farms near the place come and eat of the *fufu*, and the rite is celebrated on every farm.

To be distinguished from this is the sacrifice to Osa, the supreme god, performed after the farm is burnt and holes are made for the yams; a pot is buried with a piece of chalk and a red parrot's feather in the middle of the farm; sacrifice is offered to the pot.

At Gwatō a man builds a small house like *Aluake* (the shrine of Ake) in his yam field; and sacrifices to a small pot which he puts in it; this is called *utu*; when the yams are climbing the poles the farmers cook and sacrifice each to his own *utu* at any time that is convenient to him.

If anyone catches a tortoise or a snail when they are clearing the bush, he gets a branch of an *otua* tree and puts it in the ground; the snail or tortoise is killed there for the good of the farm.

They make the Ikure feast before the trees are felled, and sacrifice *fufu*, and sometimes a tortoise, to Iviotoi.

At Usen when the yams get many leaves they take oil and salt in a calabash spoon and go to the farm with one snail and one yam.

When they dig the yams they sacrifice to *iximi*, saying: *giniabie, giniagama; agale, omole, amele* (let yams bear, let yams be good; if they eat, children eat, wife eats).

At Yaju they sacrifice to a yam heap, taking mashed yam and palm oil; each man gets one leaf and eats it, and all big men take one to the farms.

At Jagbe, near Agbede, when the yams are grown, each head of a family takes *fufu* and sacrifices to *Utu*, a stick like *iximi* or *otua* placed in the middle of the farm near the farm house.

At Wari they sacrifice to *Utu* at the time of new yams; each man brings his hoe to the place where he sacrifices to his father, and the head of the family brings a cock; the cock is sacrificed and *fufu* offered by the other men, after which seven yams are given by each man to his father-in-law, and five to anyone who is looking after a goat for him. One big yam is put down by the head of the family, and *fufu* is sacrificed to it on the following day. A similar custom is found at Idegun.

At Ama the farmer must make one heap with his own hands, plant a yam in it, and sacrifice *fufu*.

At Awoiki one heap is made specially, one yam planted in it; when the yam begins to climb the stick a snail shell which has been used to sacrifice to a man's father is hung on it; a snail or *fufu* is sacrificed there in April when the yams are just growing and are being put on the sticks. *Fufu* is sacrificed a second time when the yams are stacked; snail shells are hung on the frame of the stack.

At Eda each man has his own *utu*; and he sacrifices a fowl to it when he is preparing to dig up his yams; snails are also sacrificed.

At Ekbe, when the yams grow well each man takes some and cooks *fufu*; when he reaches the farm he calls all yams to come and eat there. One heap is made specially big to represent *utu*.

In Agbede itself an *adanio* (*iximi*) tree represents *utu*; the chiefs buy snails near harmattan time and the head man kills them and makes soup. All men bring hoes and cutlasses to the tree, which is for the whole town, and sacrifice. They also sacrifice to *utu* on the farm with fish, rat, and the leg of an animal; they cook *fufu* and any kind of bean at home, then go to farm, call all the workers together, and sacrifice to a heap between two lines of yams, telling all the yams to come and eat, and all the *ebò* that are on the farm.

They also sacrificed to Osun when they planted yams (*Osuoko*); the king chose a man to kill a cock.

At Idumibo they sacrifice old yams to *utu* at new yam time.

At Fugar each man has *elumu* on his farm; it is an *iyoto* (*iximi*) tree, and he sacrifices a fowl to it. The yams are planted first, then the tree in the middle of the farm.

At Uzaitui there is no special *utu*, but sacrifice is offered to all the yams, at the foot of a palm tree if there is one. The head of the family kills a goat and offers *fufu*; blood is rubbed on the trunk of the tree and on the yams, and the sacrificer says:—

Maidze, maitoto, maidevime amai, emaine mimale enodzi maitoto (yams, grow in the ground for us, plenty; for us to get food, to give us life).

At Auči they have one *utu* in the farm, and one at home. When they finish planting yams they divine and sacrifice a goat on the farm by cutting its throat. A soup pot with water is put near a certain heap; there the sacrifice is made. *Fufu* is cooked at home; the goat is skinned on the farm, and cooked there. If the compound sends a man to help the sacrificer, the assistant gets the leg, the neck, and the liver; the remainder goes to the farmers. Each compound has its own *iyoto*, to which they sacrifice at new yam time.

At Agenegbodi, five days after they finish the sacrifice to Otsa (Osa), they cook food at home and drink palm wine for *utu*; but there is no sacrifice. For the yams they sacrifice a cock and a goat on the farm, and call the yams to come and eat.

(c) OTHER CULTS.

In connection with agricultural cults must also be mentioned the *Idiogbo* or *Idignidugbo*, the *idign* (properly "elders"; here "objects of cult of ancestors") of the first people who made farms along any road. In Ugo, when the yams are nearly ready, all the farmers on the road collect and clear a space; a small house is built, and chalk placed in it, to which *fufu* is sacrificed. In Gwatō, no house is built, but, as at Idumowina, three *uxure* (staves) of *iximi*, *otua*, or *oxixa*, are placed by the side of the road, chalk laid down, and sacrifice offered.

At Idumowina, on the same road, I found cowries in front of an Ireko tree; farmers offer them, if they use the road, and also bring first fruits of their crops. At Jagbe they have *Enokoho* to keep animals from the farms (identify this with *Idiogbo*); black beans are sacrificed to it annually.

The women also have a similar *ēbo* (demi-god), known as *ugame* or *igame*. At Iyekovia the women of a quarter go and eat *fufu* on a road, and sometimes sprinkle the road with water; pots are then turned upside down, and left there. At Utekon women sacrifice to *Igame* when they wish to plant corn, *oko*, etc., in new farms. At Ugo, when a woman wants to plant ground nuts, she sacrifices *fufu* and *kola* to *Ugame*, and puts cowries and seed before it also; *ugame* is represented by an *iximi* tree, but there is no *ugame* in Ugo itself.

The New Year's sacrifice to father and mother is often intimately connected with agriculture. At Idegun the Ukpe festival is celebrated when they have planted the yams; at Idua when they are ready to plant them. At Auči a native box with a lid is hung in a small house in the street; this is called *Ukbe*, and sacrifice is offered to it when they begin their farms. Each compound has its own *ukbe*.

At Ijeba the festival of *Obazu* is celebrated for fifteen days after they have cleaned the ground for their new farms. They sacrifice to their fathers, and for fifteen days many kinds of work are prohibited; no woman may make cloth, nor may anyone work on his farm or plant there under penalty of a fine of a goat and 1s. 6d. in cowries. No woman may appear on the street, and palm tree fences are put up so that they may not see the street. When *Obazu* comes out, the *ikute* (*uxure*) is placed against the wall, and on that day they begin to plant yams; goats, rams, etc., are sacrificed to the *ikute*, which no woman is permitted to see. The *ikute* is placed against the wall of the *Obazu* house in the street, and each quarter celebrates the festival simultaneously. If anyone plants before *Obazu* is ended, a leopard may carry off his wife or child to the farm which he has planted. The *Obazu* festival is celebrated to make the farms bear well.

The feast of new yams is an important one in many places. At Gwatō when new yams are nearly ready each man takes a coconut, a cock, or a goat, and sacrifices to his head. A big man dances till dawn and the dancers give him cowries or throw them on him.

At Ijeba when new yams begin, doctors sacrifice a dog, make soup and eat it. Five days before they eat of the yams each man's wife cooks *fufu* of them and each man offers to his father; they kill cows only, no goats or fowls. The name of this feast is *Ekpetikili* (Edo, *ihua*).

At Idegun they sacrifice to *Oone* at new yam time and the whole town cooks *fufu* and meat and each man takes his own to the shrine, called *Oxumuzidiri*. Each man gives twelve yams to his father-in-law, and the same number to everyone who takes charge of a goat for him, to the elder members of his family (receiving cowries in return), and five to each of his wives. They bring hoe and cutlass from the farm and each family puts them in a heap, cooks *fufu* and fish and sacrifices, saying: "If anyone eats yams, don't let them humbug his belly too much." Then

each man ties the cloth of such of his sons as are grown to be *igele* (young men), and they dance round the town; this festival is called *inorhuele*.

Uzia celebrates Esona at new yam time. All sacrifice to their fathers; and the next day each gives seven yams to his father-in-law, and brings hoe and cutlass to the shrine of his father.

At Uzaitui they sacrifice to *ikumi* (medicine) at new yam time in the king's house; each man takes one yam and the king's wives cook *fufu*. Anyone who has *oyaga* medicine can eat of this *fufu*, and when the *fufu* is finished anyone can eat of the new yams.

If anyone is in a distant country he may eat new yams, but on his return he must take a hen to the priest, who sacrifices to *oyaga*.

At Okpe *ijike* is a drum beaten after new yams are eaten. They say: "Last year I ate new yam, this year I do it again. I don't die this year."

At Idumibo a dog is killed to the king's *Osun* at new yam time and all people bring him new yams.

At new yam time in Irua they sacrificed a human victim to an *iroko* tree and danced there, saying: "Save us." Then they killed fowls, goats, and kids; when they finished cooking they brought *fufu* to the tree and ate; the bones were hung in the tree and they rubbed their bodies with white clay. N. W. THOMAS.

REVIEWS.

Africa, East: Linguistics.

Beech.

Aids to the Study of Ki-Swahili: Four Studies Compiled and Annotated.

By Mervyn W. H. Beech, M.A., F.R.A.I. Kegan Paul, Trubner and Co., Ltd. New York: E. P. Dutton and Co. xvi + 179 pp.

76

These four studies are designed to assist students who are already acquainted with the Swahili language in their preparation for the higher standard examination of the Government. The preface gives an interesting account of Swahili traditions as to themselves and their origin. Then follows a treatise on Ki-Swahili writing, that is, Ki-Swahili written in the Arabic character. The subject is by no means easy, and Mr. Beech's notes are the first attempts to deal with it in English. After some full explanations of the alphabet and orthographic signs, and some remarks on the elegancies of correspondence, he gives facsimile specimens, first of letters written as they should be, and then of actual letters and manuscripts received by himself. The letters are accompanied by transliterations and the manuscripts also by translations. The second study consists of two fairly long Ki-Swahili stories with translations and notes on idioms derived from the explanations of the narrators. The third study is a collection of enigmas and aphorisms with similar explanatory notes. The final study is a Ki-Swahili account of magic in Pemba. The book is a very successful combination of useful and interesting matter. The student will certainly find it an aid to his studies, whilst the ethnologist will find in it much information about the most important people of East Africa. S. H. RAY

Asia Minor: History.

Jastrow.

The War and the Bagdad Railway. By Dr. Morris Jastrow, Ph.D., LL.D. Philadelphia. 1917.

77

In this work, Dr. Morris Jastrow, the Professor of Assyriology in Pennsylvania University, gives in a popular form his impressions on the military importance of Asia Minor, as illustrated at various periods of history from the earliest days of civilization up to the present war. His theory is that Asia Minor is a "hinterland" to Syria, Palestine, and Egypt towards the Mediterranean, and to Mesopotamia towards the Persian boundary. He does not here seem to use the word "hinterland"

in the sense which it had when first invented and used by the Germans as an excuse for their African annexations. It then implied the asserted right of every country which owned a strip of coast (especially in Africa) to take possession, if strong enough, of all the inland country behind it for the purpose of exploiting its natural resources. Such a claim had, of course, no justification in nature or history, but, having once been adopted by a powerful monarchy, it was of necessity used in self protection by others. This, however, is not what Dr. Jastrow means by "hinterland." He means that Asia Minor is a powerful natural fortress, which, if occupied by a warlike race, threatens the security of peaceful and prosperous regions in the plains. This is a commonplace of history, but it does not make the peninsula of Asia Minor a "hinterland" in any accepted sense of the word. It is an important military position, but not a "hinterland."

The accounts of early relations between this strong plateau when occupied by the Hittites and the great Empires of Babylonia, Assyria, Persia, and Egypt are well explained, and the resemblance between the position of the Hittites and that of the Ottoman Turks is also brought out; but the many points of difference are not sufficiently dwelt on. Dr. Jastrow works his theory too hard. Can it really be believed (as he asserts on page 64) that the defeat of the Arab invaders of France by Charles Martel in 732 had any connection with the failure of the Khalifas to take Constantinople? Nor is Dr. Jastrow's knowledge of Turkish history very accurate. He says (page 73) that Selim I conquered Persia, Hindustan, Egypt, Syria, and the coast line of Arabia! This will be news to students of Persian and Indian history. Selim doubtless wished to conquer Persia, and probably India also. He won one great battle against Ismail, Shah of Persia, but he never got possession of any important part of Persia, and could not even take Baghdad, which fell into the hands of his successor, the great Sulaiman, twenty years later. Selim made no attempt on India. His successor tried to find a footing on the sea coast of Gujarāt, but met with signal defeat at the hands of the Portuguese. It is evident, therefore, that Dr. Jastrow's history must be accepted with caution. Nevertheless, the book is not without value. Perhaps the most useful part, as well as the most complete, is that regarding the Baghdad Railway, which gives much useful information derived from personal observation.

M. LONGWORTH DAMES.

Religion.

Montgomery.

Religions of the Past and Present: A Series of Lectures delivered by Members of the Faculty of the University of Pennsylvania. Edited by James A. Montgomery, Ph.D., S.T.D. Philadelphia and London: J. B. Lippincott Co. 1918. 78

This volume consists of a course of lectures delivered during the winter of 1916-17 by members of the Faculty of the Graduate School of the University of Pennsylvania. The lectures are fourteen in number—on Primitive Religion, the Egyptian Religion, that of Babylonia and Assyria, the Hebrew Religion, that of the Veda, Buddhism, Brahmanism and Hinduism, Zoroastrianism, Mohammedanism, the Religion of Greece, that of the Romans, that of the Teutons, Early Christianity, and Mediæval Christianity. They were delivered by authorities on the various subjects, inspired by wide views and scientific study; and it is not surprising that they are said to have aroused enthusiasm and interest. In each case, however, the subject was so vast and the survey necessarily so rapid, that an outline only was possible, and important details had to be passed over. In fact they are addressed, not to scientific, but to popular audiences. Yet scientific readers will find much in them that is worth reading. The lectures—it could not be otherwise—are quite "up to date," and put before the reader with lucidity and point the results of the

latest inquiries. The editor, writing on the Hebrew Religion, states the purpose of the course as "not so much to give the history of the great religions as to present their contents, especially as these have had effect and value in the world." And this purpose has been generally adhered to by the lecturers. The result of this has been often unfortunate, since the origins, whether of the religion itself or of particular features of it, even if of supreme importance for understanding it and its extension and influence, have had to be, if not left in silence, treated in a very cursory manner, in order to deal with its maturity and central ideas. A notable exception is the lecture on the Religion of Greece by Dr. Walter Woodburn Hyde, the longest and most attractive in the book. It is an illuminating sketch of the history of Greek religion from its prehistoric beginnings, so far as they have been unveiled by archaeological discoveries, through its gorgeous maturity to its decline and final expiring flickers. The animism from which it started, the various influences which developed it, the position of the Homeric poems, the mysteries Orphic and Eleusinian, the philosophical inroads upon it, are all sketched, as far as the limits of the lecture permit.

Taken altogether, it would be hard to find a better introduction than this course for anyone who wished to know something of the great religions of the world and their relation to one another, or one more likely to lead him on to scientific investigation for himself. And that is doubtless what the writers would most desire.

E. SIDNEY HARTLAND.

ANTHROPOLOGICAL NOTES.

Anthropology in the United States.

Dr. Alfred Marston Tozzer, of the Peabody Museum (Harvard University), is in the military service of the United States. His work has certain anthropological aspects.

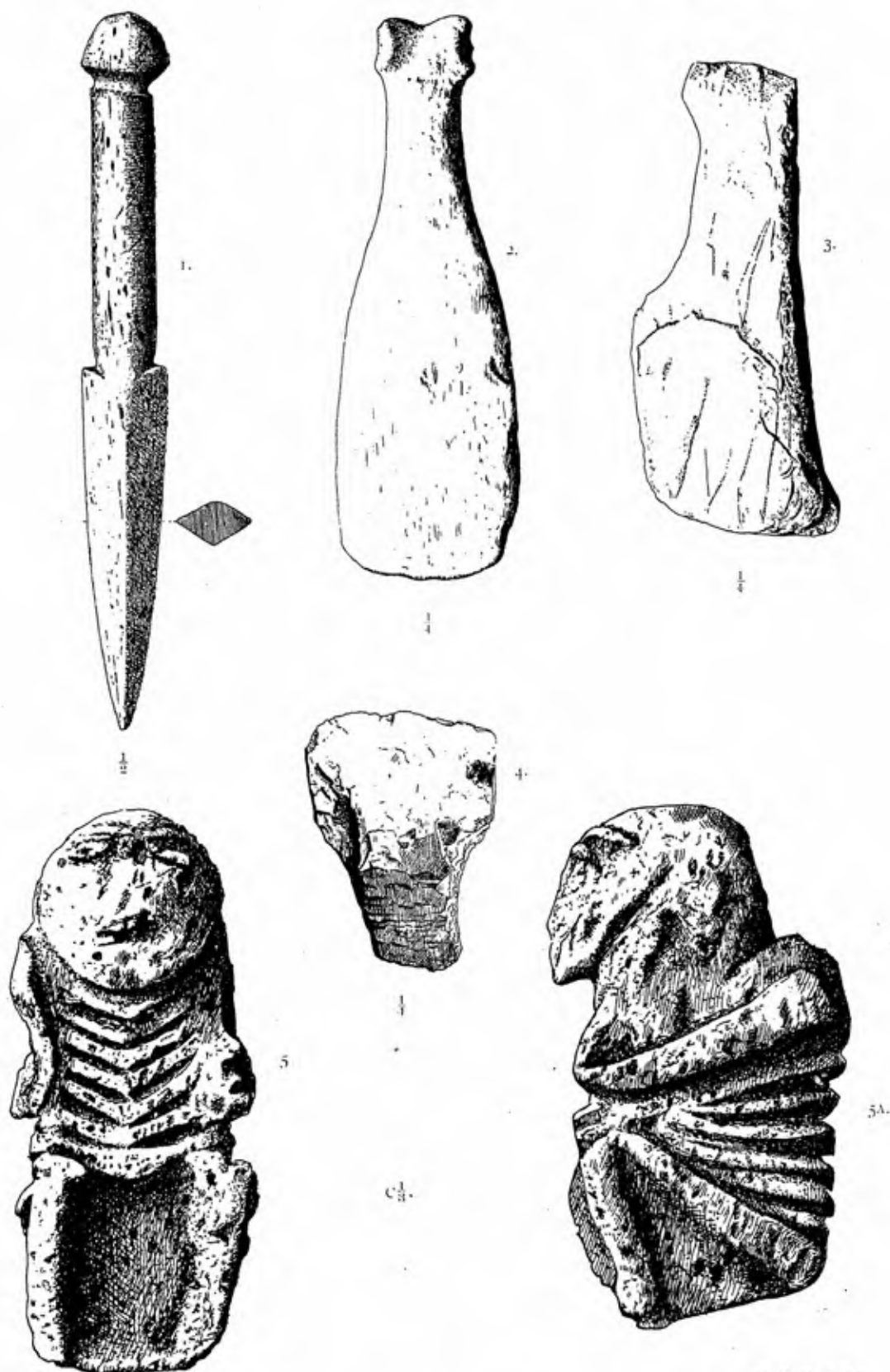
79

Mr. George G. Heye has greatly advanced the cause of American Anthropology by the establishment of a magnificent new Museum at Broadway and 155th Street, New York. The name of the institution is the "Museum of the American Indian, Heye Foundation." Its inception and completion are largely the work of Mr. Heye, who may, therefore, rightly be regarded as one of the greatest friends of anthropological science. On the staff of the Museum are: George G. Heye, Esq., Professor Marshall Saville, Dr. George Pepper, Dr. Theodoor de Booy, Mr. F. W. Hodge, and others. The Museum forms one of a group of beautiful buildings, the others being the Hispanic Society of America and the American Geographical Society.

Mr. Frederick Webb Hodge, lately Ethnologist-in-charge of the Bureau of American Ethnology, Washington, is now with the new Museum of the American Indian, New York City.

Dr. Hiram Bingham, of Yale University, is in the military service of the United States and is at present in Europe.

Dr. C. F. Newcombe, of Victoria, Vancouver Island, who has an intimate knowledge of the tribes of the North-west coast, conducted an expedition, during 1917, for the Peabody Museum of Harvard University, to the remote villages of the Kwakiutl Indians, situated upon the inlets of South-western British Columbia. He secured an unusually good collection, illustrating the ceremonies and domestic life of this people. Among the objects may be mentioned several large cannibal bird masks used in the winter dances. Dr. Barrett, Director of the Milwaukee Public Museum, also made a large collection about three years ago among the coast Indians, principally the Haida. As such things are no longer made, they will become increasingly scarce for collectors.



H. Balfour del.

SOME ETHNOLOGICAL SPECIMENS FROM THE CHATHAM ISLANDS.

ORIGINAL ARTICLES.

Ethnology.

With Plate K.

Balfour.

Some Specimens from the Chatham Islands. By H. Balfour, M.A.

80

The specimens figured on the accompanying plate are selected from a number of objects collected by Mr. Clough many years ago in the Chatham Islands, and purchased by me for the Pitt Rivers Museum at Oxford in 1893. In addition to the examples here illustrated and described, the collection included some fifty stone adze-blades, a few bone fish-hooks, etc.

Fig. 1.—A well-made dagger of bone, apparently that of a large cetacean. It is 22.5 cm. in length and is made of a single piece. The blade tapers gradually to a point and is lozenge-shaped in transverse section, the obtuse angle being more clearly defined on one surface than on the other. At its junction with the grip, the blade is shouldered. The grip is circular in section and terminates in a large, rounded pommel, which is separated from the grip by a groove forming a neck. It is a carefully-made and shapely weapon of a type hardly to be expected from this locality. As far as I can ascertain, it is unique. It is without doubt the actual specimen referred to by E. Tregear (*Trans. New Zealand Inst.*, XXII, 1889, p. 79), who in his remarks upon the Clough collection of Chatham Islands objects, says: "Among other curiosities is a bone dagger, about 9 inches long, the blade being about $4\frac{1}{2}$ inches in length, with a double edge. I do not know of any other Polynesian people having used the dagger except the Hawaiians . . . , but Tapu assured me that the weapon was known and used by the ancient Moriori." I can recall nothing resembling this dagger either from Polynesia, from Melanesia, or from Micronesia, and I am, therefore, unable to link this form with any type from the Pacific Islands. It seems likely, in fact, that this type of bone dagger may have been evolved locally. One would turn to New Zealand in seeking for a parallel, but I can recall no similar example either from North or from South Island, although Mr. Skinner and others have pointed out the cultural similarities which indicate a link between New Zealand (especially the Otago district) and the Chatham Islands.

Fig. 2.—Spatulate club made from a fairly compact schist containing quartz and micaceous grains. Specific gravity 2.65 to 2.7,* length 34.9 cm. The general form is that of the Maori *mere* and the distal end is sharp-edged. There is no sharp demarkation between the blade and the grip, the one merging gradually into the other, and the lateral edges becoming more rounded and blunter as the grip is approached. This restriction of the sharp cutting edge to the distal end is a primitive feature in this type of club, and points to the probable derivation from a *toki*, or adze type, which General Pitt Rivers (Colonel Lane Fox) urged many years ago (*Primitive Warfare*, 1868, section ii, p. 421, and *Journ. Ethnol. Soc., N.S.*, ii, 1870, p. 106). The expanded stop, or pommel, is roughly carved, and is broadly notched at the extremity; the ornamental shaping of this end is not quite symmetrical. There is no perforation for a wrist-thong, such as almost invariably occurs in the Maori *mere*, and this may be regarded as a primitive feature, though the expanded pommel acts as an effective stop. This specimen has been made by careful "battering" of the stone, and has not been ground.

Fig. 3.—Single-edged, chopper-like club, *ohewa*, made from a schist, though of a coarser and more laminated kind than the last. Length 29.5 cm. The blade is sharp-edged along one margin only, the cleaving-edge extending for about half the whole length. The remainder of this margin is re-entrant, to form the narrower

* I am indebted to Professor W. Sollas for identification of the material of the stone implements.

grip which terminates in a downward projection, or stop. The workmanship is very rough, the shape having been produced by battering only, and there has been no attempt to achieve a finished surface. In spite of its rudeness, it is a not unhandy weapon. More or less closely allied forms of stone club from the Chatham Islands are figured by Giglioli (*La Collezione Etnografica*, 1911, pt. 1, Pl. p. 48), who shows a far more shapely and finished specimen of the *okewa*; by Partington (*Album*, II, Pl. 235, Fig. 1), from a specimen in the British Museum, closely similar to the one in the Giglioli collection; by Von Haast (*Trans. New Zealand Inst.*, XVIII, 1885, Pl. i), whose figure more nearly corresponds with the example which I here illustrate, though there is no stop at the end of the grip; and by Skinner (*Journ. Roy. Anthr. Inst.*, XLVI, 1916, p. 196, Fig. 20), who records an example in the Otago Museum, which resembles the Giglioli and British Museum examples, but has no trace of a stop. An undecorated Maori wooden club of the *waha-ika* type in the British Museum, appears to be nearly related to these *okewa* clubs of the Chatham Islands in their more finished and perfected form, while a very rare type of chopper-like greenstone *mere* figured by Hamilton (*Maori Art*, 1896, Pl. XLVIII, Fig. 2), would seem to be morphologically related to this series. It was found in a Maori burial cave north of Auckland.

Fig. 4.—*Mata* of slate showing imperfect cleavage. Specific gravity 2·8, length 16·3 cm., width 11·8 cm. This is a fairly typical example of the very roughly made *tanged* blades which have been found abundantly in the Chatham Islands, both on Rekohu and on Pitt Island. These are reputed to have been used as blubber-knives, the flesh of the grampus and other cetaceans having been much valued as food. As is usual with the *mata*, the workmanship is exceedingly rough, the natural cleavage planes being utilised for producing the thin blade, whose nearly straight cutting edge is formed by the intersection of two cleavage-planes, and shows no attempt at trimming by secondary flaking or battering. The narrowed tang is fashioned by rough battering of the margins and is quite blunt at the edges. This rough and rather haphazard method of manufacture seems to apply generally to the *mata*, and results in great variety of outline and of form of the cutting edge. The object seems to have been to produce by the simplest means a *tanged* implement having a cutting-edge of some sort, the details of shape being of slight importance. Partington (*Album*, III, Pl. 223, Fig. 2) shows a *mata* fitted with a modern haft of wood, said to be after the old style, but I have not been able to ascertain whether these blades were usually hafted, or whether they were sometimes merely held in the hand, as seems not unlikely, since the tang in the present instance would furnish a convenient hand-grip.

A point of interest in regard to these Chatham Islands *mata* types, is to be found in their analogies elsewhere. Rough blades of this *tanged* form are rarely met with in the Pacific, but I have recently drawn attention to the similarity which exists between the *mata* of the Chatham Islands and the *mataa* of Easter Island (*Geographical Journal*, May, 1917, p. 345, and *Folk-Lore*, XXVIII, 1917, p. 358). The latter are, it is true, made from flakes of obsidian and not from slate or schist, but there is much general resemblance between the two series, not only in form and in mode of manufacture, but also in name. In the Easter Island *mataa* the cutting-edges are simply formed by the intersection of two large flake surfaces, and are exceedingly sharp. Also, like the Chatham Islands examples, they are extremely variable in outline, which is often very unsymmetrical, as might be expected from the crude method of arriving at the result. The tangs were formed by flaking the margins, usually with no great care. Obsidian, unlike slate or schist, flakes very readily and effectively. It is known that the Easter Islanders hafted their *mataa*, which appear to have served largely as weapons.

The possibility of there being a real relationship between the tanged blades of Easter Island and the Chatham Islands is greatly increased by the discovery in the latter group of a *mata* made of *obsidian*, which, judging from the photograph kindly shown to me by Mr. Skinner, is undistinguishable from many Easter Island examples. The rarity of *obsidian* examples in the Chatham Islands is explained by the scarcity of this material. Von Haast (*Trans. New Zealand Inst.*, XVIII, 1885, p. 26) mentions that volcanic glass, *tuhua*, was not obtainable in any quantity, although a reef of it exists under water at the south-east corner of the island at Manukau. It would be only natural for the natives to substitute the abundant, if less efficient, slates and schists for the rare *obsidian*, and the employment of a different class of stone would impose a somewhat different method in shaping the implements, since the processes applicable to the one material cannot be employed with the other. The possibility, of course, remains that the Chatham and Easter Islanders may have independently evolved these similar tanged stone blades. I am no believer in the unwarranted doctrine that instances of independent invention of similar appliances are impossible. At the same time, I have urged for a quarter of a century or more that such occurrences should not be assumed until the alternative case for common origin and dispersal from a common centre has been carefully investigated. I have already hinted (*op. cit.*) that the *mataa* of Easter Island may be referable, like many other items in the culture of that island, to the intrusion of a *Melanesian* element. This view, which as regards the *mataa* is tentative only, is based upon the apparent absence of similar implements among *Polynesian* peoples, and upon the fact that a tanged *obsidian* blade, strikingly recalling the form of the better examples of *mataa*, though of finer workmanship, was found in the Yodda Valley in British New Guinea, within the area, that is, influenced by *Melanesian* culture (*see* MAN, 1915, 91, Pl. M.). Nor is this an isolated example from New Guinea, though admittedly rare. That there was a *Melanesian* element in the culture of the Chatham Islands (and in New Zealand) seems to be fairly generally admitted, and although its exact provenance has not yet been accurately determined, the apparent fact that the *Mori* culture was influenced by a non-*Polynesian* element is of some importance to the comparative study of the *mata* of the Chatham Islands and the *mataa* of Easter Island, as accentuating the possibility of their being morphologically related.

Figs. 5 and 5a.—Grotesque statuette carved in pumice-stone. Height 27 cm. This is one of the rare examples of the human form carved in stone from the Chatham Islands. The figure is very rudely executed in the rough, soft, vesicular material. The surface detail has been somewhat obscured by abrasion and the specimen is evidently an old one. It represents a squatting figure with knees and elbows strongly flexed, the hands, apparently placed on the sides of the head or over the ears. The facial features are but sketchily indicated; the eyes and eyebrows are in relief, but the nose either was not represented or has been weathered away. A noteworthy feature is seen in the great prominence given to the ribs, which suggests a state of extreme emaciation. This latter peculiarity again suggests a possible cultural link between the Chatham Islands and Easter Island, since one of the marked characteristics of a large proportion of the well-known human effigies carved in *toromiro* wood, is the very pronounced manner in which the ribs are indicated, combined with other details which show that the intention was to represent emaciated human forms, or, possibly, the dead. Apart from this common feature of the "staring" ribs, no resemblance can be seen between the Chatham Islands pumice figure and the Easter Island wooden statuettes, and the difference in the rendering cannot be ascribed merely to the difference in the material used. A seeming link between the two types is, however, afforded by a wooden figure from the Chatham Islands now in the Canterbury Museum, Christchurch, N.Z. Sketches

of this figure are given by Partington (*Album*, III, Pl. 223, Fig. 1), and Mr. Skinner has shown me some good photographs of the specimen. In spite of the rudeness of its execution and the limited amount of detail indicated, this figure bears a general resemblance to the Easter Island wooden figures, and the exaggerated prominence of the ribs greatly accentuates the similarity. There is at least a possibility of a community of origin for these wooden figures from the Chatham Islands and Rapanui, and thus, by implication, is suggested a possible affinity for the figure of pumice-stone here represented.

In view of the interest which attaches to the ethnology of the Chatham Islands and to the diagnosis of the elements from which the culture of this group has been evolved, I have thought it worth while to publish these examples as an aid to further study. As far as I know the bone dagger is unique, nor do I know of any close parallel to the stone figure. As I have recently pointed out, the evidence of a strong Melanesian element in the culture of Easter Island is very striking, and inasmuch as the presence of a similar non-Polynesian strain in the culture of the Chatham Islands (and, one may add, also of New Zealand) is becoming more recognised, the suggestion offered as to the possible affinities of the *mata* and of the type of stone figure which I have described, may have some bearing upon the ethnological problems of the South Pacific.

HENRY BALFOUR.

Europe: Witchcraft.

Murray.

The Devil's Mark. By M. A. Murray.

81

Every witch was said to carry on his or her person a mark inflicted by the Devil when the witch joined the Society. Reginald Scot, the great witch-advocate of the sixteenth century, summarises the evidence thus: "The Divell giveth to everie novice a marke, either with his teeth or with his claws."* The *Lawes Against Witches and Conivration*, published "by authority" in 1645, state that "their said Familiar hath some big or little Teat upon their body, wher he sucketh them; and besides their sucking, the Devil leaveth other markes upon their bodies, sometimes like a Blew-spot, or Red-spot, like a flea-biting." Sir George Mackenzie, the famous Scotch lawyer, in describing what did and what did not constitute a witch, says, "The Devil's Mark useth to be a great Article with us, but it is not *per se* found relevant, except it be confest by them, that they got that Mark with their own consent; *quo casu*, it is equivalent to a Paction. This Mark is given them, as is alledg'd, by a Nip in any part of the Body, and it is blew. *Delrio* calls it *Stigma*, or Character, and alledges that it is sometimes like the impression of a Hare's foot, or the Foot of a Rat, or Spider."† Forbes, writing considerably later than Mackenzie, says: "On the meaner Proselytes, the Devil fixes in some secret Part of their Bodies a Mark, as his Seal to know his own by; which is like a Flea Bite or blew Spot, or sometimes resembles a little Teat, and the Part so stamped doth ever after remain insensible, and doth not bleed, tho' never so much nipped or pricked by thrusting a Pin, Awl, or Bodkin into it; but if the Covenanter be of better rank, the Devil only draws Blood of the Party, or touches him or her in some part of the body without any visible Mark remaining."‡

Local anæsthesia, as described by Forbes, is a phenomenon always associated in the popular mind with the Devil's Mark; and the evidence suggests that there is a substratum of truth in the statements. I can, however, offer no solution of the

* Reg. Scot: *Discoverie of Witchcraft*, Bk. III, Ch. 3. See also Danaeus: *Dialogue*, Ch. III.

† *Laws and Customs of Scotland*, Title x, p. 48.

‡ *Institutes of the Law of Scotland*, II, pp. 32-4.

problem as yet, and will therefore confine myself to the infliction of the "blew Spot" and the occurrence of the "little Teat."

It is clear that these Marks are two distinct things, and must be considered separately.

The Mark proper is the coloured spot or design which followed the infliction of a prick or nip by the claws or teeth of the Devil on the person of the neophyte. The red mark is described as being like a flea-bite, i.e., small and circular; the blue mark seems to have been larger and more elaborate, apparently in some kind of design.

From the evidence given five facts are clear: (1) that the mark was coloured; (2) that it was permanent; (3) that it was caused by the pricking or tearing of the skin; (4) that the operator passed his hand or fingers over the place; (5) that the pain could be severe, and might last a considerable time. Put together in this way, the facts suggest tattooing.

Boguet says that in the east of France the mark was usually on the left shoulder and was in the shape of the foot, or foot-print, of a hare; but he gives a few exceptional cases: "On a veu vne, qui auoit vne figure rapportant en grandeur à un petit denier, du centre de laquelle s'estendoient plusieurs filamens vers la circonference. La marque de la Belouenette, qui a esté brulée a Besançon, estoit au dessus de sa nature, vn peu plus bas que le nombril. Celle, dont Guillaume Proby d'Anchay se trouua marquée au col du costé droit, estoit de mesme de la grandeur d'un petit denier, tirant sur le brun. Iean de Vaux auoit la sienne au doz, & ressembloit à vn petit chien noir."* Among the Aberdeen witches, 1597, the accusation against Andro Man was that "Christsonday (the Devil) bit a mark in the third finger of thy right hand, whilk thou has yet to show"; and against Christen Mitchell, that "the Devil gave thee a nip on the back of thy right hand, for a mark that thou wast one of his number."† De Lancre, the Inquisitor in the Basses Pyrenées, in 1609, remarks that "comme le Diable faict sa marque, on sent vn peu de chaleur, qui penetre plus ou moins profondement la chair, que plus ou moins il pince le lieu qu'il touche." He also gives the further information that the mark was made with "a pin of sham gold," and that the place was the white of the left eye; but the neophytes were also marked on the shoulder and on the side, the skin being torn to the effusion of blood, and the pain sometimes lasting as long as three months.‡ The Yarmouth witch, tried in 1644, saw a tall black man standing in the moonlight at her door; "he told her, he must first see her Hand; and then taking out something like a Pen-knife, he gave it a little Scratch, so that Blood followed, and the Mark remained to that time."§ Rebecca Jones, an Essex witch tried in 1645, confessed that "a handsome young man came to the door, who asked her how shee did, and desired to see her left wrist: and he then tooke a pin from this examinant's owne sleeve, and pricked her wrist twice, and there came out a drop of blood, which he took off on the top of his finger, and so departed."|| The child-witch, Jonet Howat, of Forfar, tried in 1661, said that "the devil kissed her and nipped her upon one of her shoulders, so as she had great pain for some time thereafter"; later he came to her, and "calling her his bonny bird did kiss her, and stroked her shoulder (which was nipped) with his hand, and presently after she was eased of her former pain." Elspet Alexander, of the same coven, was also marked in the shoulder; four weeks later, "the devil stroked her shoulder with his fingers, and after that she had ease

* Boguet: *Discours des Sorciers*, pp. 315-17.

† *Spalding Club Miscellany*. I, pp. 121, 165. Spelling modernised.

‡ De Lancre: *Tableau*, pp. 195, 399.

§ Hale: *Collection of Modern Relations*, p. 46.

|| Howell: *State Trials*. IV, 855.

"in the place formerly nipped by the devil."* Madame Bourignon, of Lille, was informed by the witch-girls under her care that "le Diable leur faict quelque marque comme avec une aleine de fer en quelque partie du corps."† Marie Lamont, tried in 1662, voluntarily made a confession, in which she said that "the devil nipit her upon the right syd, qlk was very painful for a tym, but yairefter he straitkit it with his hand and healed it; this she confesses to be his mark."‡

The Somerset witches were marked on the fingers; it was stated of Elizabeth Style that "he prickt the fourth finger of her right hand, between the middle and upper joynt (where the sign at the Examination remained)"; of Alice Duke, that "the Devil prickt the fourth finger of her right hand between the middle and upper joynt (where the mark is yet to be seen)"; and of Christian Green, that "the Man in black prickt the fourth finger of her Right-hand between the middle and upper joints, where the sign yet remains."§ Annabil Stuart confessed at Paisley in 1678 "that the Devil took her by the Hand and nipped her Arm, which continued sore for half an hour."|| At Borrowstowness the Devil took Margaret Pringle "by the right hand, whereby it was grievously pained, but having it touched of new again, it immediately became whole."¶ Of the Renfrewshire witches in 1696, little Thomas Lindsay received "a Nip on the Neck which continued sore for Ten days"; and the Devil gave John Reid "a Bite or Nip in the Loyn, which he found painfull for a Fortnight."** One of the latest of the Scotch witches, the "young lass" Isobel Adams, at Pittenweem in 1704, confessed that the Devil "put his mark in her flesh which was very painful."††

The other form of the Devil's mark was the "little Teat." It occurred on various parts of the body; was said to secrete milk and to give suck to the familiars, both human and animal, and was sometimes cut off by the witch before being searched. The descriptions of the "teat" point to its being that natural phenomenon, the supernumerary nipple. Cases of polymastia, or supernumerary breasts, and of polythelia, or supernumerary nipples, are constantly recorded by modern medical observers. "These accessory structures are usually situated on the chest wall, the upper part of the abdominal wall, or in the axillæ, but they have been met with on the shoulder, the buttock, the thigh, and other extraordinary positions. As a rule they are functionless."‡‡ Polythelia occurs in both sexes; according to Bruce, "of 315 individuals taken indiscriminately and in succession, 7·619 per cent. presented supernumerary nipple; 9·11 per cent. of 207 men examined in succession presented supernumerary nipple; and 4·807 per cent. of 104 women." He concludes that, "according to the present observations at least, supernumerary nipples occur much more frequently in the male than in the female."§§ Cameron tabulates the positions of the supernumerary nipple in 105 cases: "96 were situated in thorax, 5 in axilla, 2 in back, 1 on shoulder, 1 outside of thigh."|||

All writers on the subject agree that the phenomenon is of more common occurrence than is usually supposed, but that many cases pass unnoticed, unless well marked when in men, or causing discomfort by functioning when in women. This view is supported by the fact that, during the recent unparalleled opportunity for the physical examination of large numbers of men, many cases have been published in *The British Medical Journal* for 1917, as occurring among recruits for the

* Kinloch and Baxter: *Reliquiæ Antiquæ Scot.*, pp. 124-6.

† Bourignon: *La Vie Extérieure*, p. 223.

‡ Sharpe: *Historical Account*, p. 132.

§ Glanvil: *Sadducismus Triumphatus*. II, p. 136.

|| *Id id.*, p. 291.

¶ *Scots Magazine*, 1814, p. 201. Spelling modernised.

** *Narrative of the Sufferings of a Young Girl*, p. xli.

†† Sinclair: *Satan's Invisible World*, p. lxxxix.

‡‡ Thompson and Miles: *Manual of Surgery*, II, p. 341.

§§ Mitchell Bruce: *Journal of Anatomy*, XIII, pp. 438, 447.

||| Cameron, *id.* XIII, p. 153.

army. The supernumerary nipple is usually very much smaller than the normal; like the normal it is a modification of cutaneous tissue and is not attached to muscular tissue; its removal is a simple operation, in fact it would be quite possible for an unskilled operator to cut it off with a sharp knife. In women the supernumerary nipple is observed to increase at the time of the periods; in some cases during lactation sufficient milk is secreted as to make it a matter of indifference whether the child is suckled at the normal nipples or at the supernumerary one. In cases of polymastia, the nipple is not always formed; the milk, when secreted, issuing from a small opening. Though the nipple is congenital, the supernumerary breast may develop, or, at any rate, become noticeable later; the theory being that the ducts carrying the secretion from the supernumerary to the normal breast become blocked in some way, and that the milk is thus exuded through the pore of the supernumerary breast. The change in the case quoted by Cameron, as well as in the case of the witch Rose Cullender seems to have been caused by a strain.

Making allowance for the unscientific language of the recorders of the witch trials, it will be seen that the descriptions of the "witch pap," or "little Teat," exactly coincide with these anatomical facts. I give the evidence below, the trials being in chronological order. It will be observed that the cases are from England and New England only; if the phenomena of polymastia or polythelia occurred in France and Scotland, there are no records of the fact in the witch trials of those countries.*

Alice Gooderidge and her mother, Elizabeth Wright, of Stapenhill, near Burton-on-Trent, were tried in 1597: "The old woman they stript, and found behind her "right sholder a thing much like the udder of an ewe that giueth sucke with two "teates, like vnto two great wartes, the one behinde vnder her arnehole, the other "a handfull off towards the top of her shoulder . . . being demanded how long "she had those teates, she aunswered she was borne so. Then did they search "Alice Gooderidge, and found vpon her belly, a hole of the bignesse of two pence, "fresh and bloody, as though some great wart had been cut off the place."†

The witch of Edmonton was tried in 1611: "The Bench commanded three "women to search the body of Elizabeth Sawyer. They all three said, that they "a little aboue the Fundiment of Elizabeth Sawyer found a thing like a Teate the "bignesse of the little finger, and the length of half a finger, which was branched "at the top like a teate, and seemed as though one had sucked it, and that the "bottome thereof was blew, and the top of it was redde."‡

The greatest number of cases recorded in one place is in Essex during the trials before Sir Matthew Hale in 1645: Anne Leech said that her "imps did usually suck "those teats which were found about the privie parts of her body. . . . [Two "women searched Mary Greenleife], and found that the said Mary had bigges or "teats in her secret parts, not like emerods, nor in those places where women use "to be troubled with them. The examinant, being asked how she came by those "teats which were discovered in her secret parts, she saith she knows not unlesse "she was born with them: but she never knew she had any such untill this "time. . . . [A woman searched Margaret Moone], she found three long teats "or bigges in her secret parts, which seemed to have been lately sucked; and that "they were not like pyles, for this informant knows well what they are, having "been troubled with them herself. Upon the searching of her daughters, this in- "formant found that two of them had biggs in their privy parts as the said Margaret

* The geographical distribution of certain customs has not been worked out at all. It is worth noting, however, that the sucking familiar is peculiar to England, the change of name on admission is peculiar to Scotland, and the Devil in the form of a goat is peculiar to France.

† *Also Goodridge*, pp. 8, 9.

‡ *Wonderfull discoverie of Elizabeth Sawyer*.

"their mother had. . . . She with some other women were required to search Sarah Hating, the wife of William Hating; Elizabeth Harvy widow, and Marian Hocket widow, and upon her said search (being a midwife) found such marks or biggs, that she never saw in other women: for Sarah Hating had foure teats or bigges in those parts almost an inch long, and as bigge as the informant's little finger: That the said Elizabeth Harvy had three such biggs, and about the same scantling: And that the said Marian Hocket had no such bigges; but was found in the same parts not like other honest women. Sarah Barton, sister of the said Marian Hocket (also suspected of being a witch) said the said Marian had cut off her bigs, whereby she might have been more suspected to have been a witch, and laid plaisters to those places."* "Another Evidence deposed that she once heard the said Margaret [Landish] say, that her Imps did usually suck two Teats near the privy parts."†

Among the Huntingdonshire witches in 1646 was John Clarke, junior, a labourer of Keiston. John Browne, a tailor at Raunce, deposed that he met Clarke on the road; Clarke "said he was in haste; for his Father and Mother were accused for Witches, and that he himselfe had been searched; and this Informant answered, and so have I. Then Clarke asked this Informant, whether any thing were found about him or not? he (this Informant) answered, that they said there were marks: Clarke said againe, had you no more wit but to have your marks found? I cut off mine three dayes before I was searched."‡

A man-witch about 1649 said that "upon his compact with the Devil, he received a flesh brand, or mark upon his side, which gave suck to two familiars."§

The Salisbury witch, Anne Bodenham, tried in 1653: "Women searched the Witch in the Gaol, and they delivered their oaths at the Assises, that they found on her shoulder a certain mark or Teat, about the length and bignes of the Niple of a Woman's breast, and hollow and soft as a Niple, with a hole on the top of it: And searching further, they likewise found in her secret place another Teat, soft, and like the former on her shoulder."§

At St. Albans, about 1660, there was a man-witch, who "had like a Breast on his side."¶

In the same year at Kidderminster a widow, her two daughters, and a man were brought to trial; "the man had five teats, the mother three, the eldest daughter one. When they went to search the woman, none were visible; one advised to lay them on their backs, and keep open their mouths, and they would appear, and so they presently appeared in sight."** Alice Huson, of Burton Agnes, Yorks, in 1664, said: "I have, I confess, a Witch-pap, which is sucked by the Unclean Spirit."††

Abre Grinset, of Dunwich, Suffolk, in 1665: "The Devil did appear in the form of a Pretty handsom Young Man first, and since Appeareth to her in the form of a blackish Gray Cat or Kitling, that it sucketh of a Tett (which Searchers since saw in the place She mentioned)."‡‡ Rose Cullender, a Suffolk witch also tried in 1665: "The searchers [six women] began at her head, and so stript her naked, and in the lower part of her belly they found a thing like a teat of an inch long, they questioned her about it, and she said, that she had got

* Howell, IV, 838, 843, 849, 850.

† *Tryalls of Four Notorious Witches at Worcester*, p. 2. The place is wrongly given; it should be Essex, not Worcester.

‡ Davenport: *Witches of Huntingdonshire*, p. 15.

§ Gerish: *The Devil's Delusions*, p. 12.

§ Bower: *Dr. Lamb Revived*, p. 28.

¶ Gerish: *Relation of Mary Hall*, p. 24.

** Howell, IV, 827 note.

†† Hale, p. 58.

‡‡ Petto: *A Faithful Narrative*, p. 18.

"a strain by carrying of water which caused that excrescence. But upon narrower search, they found in her privy parts three more excrescencies or teats, but smaller than the former: this deponent farther saith, that in the long teat at the end thereof there was a little hole, and it appeared unto them as if it had been lately sucked, and upon the straining of it there issued out white milky matter."^{*}

Temperance Lloyd, a Devonshire witch, tried in 1682: "Upon search of her body, this informant did find in her secret parts, two teats hanging nigh together like unto a piece of flesh that a child had suckt. And each of the said teats was about an inch in length."† Bridget Bishop, tried at Salem in 1692: "A Jury of Women found a preternatural Teat upon her Body: But upon a second search, within 3 or 4 hours, there was no such thing to be seen."‡ Elizabeth Horner, another Devon witch, in 1696: "Had something like a Nipple on her Shoulder, which the Children [who gave evidence] said was sucked by a Toad."§

Widow Coman, an Essex witch, died in 1699: "Upon her death I requested Beeke the midwife to search her body in the presence of some sober women, which she did and assured me that she never saw the like in her life that her fundament was open like a mouse-hole and that in it were two long bigges out of which being pressed issued blood that they were neither piles nor emrods for she knew both but excrescencies like two biggs with nipples which seemed as if they had been frequently sucked."|| Elinor Shaw and Mary Phillips, of Northamptonshire, in 1704: "The infernal Imps did Nightly suck each of them a large Teat, or pieces of red Flesh in their privy parts."¶ M. A. MURRAY.

Obituary.

Haddon.

H. W. Fischer. By A. C. Haddon, Sc.D., F.R.S.

82

Hendrik Willem Fischer was born in Leyden on June 21st, 1864, and died there on March 7th, 1918. From 1884 to 1904 he served as a lieutenant and captain in the Military Engineer Corps in the Netherlands East Indies, but his health broke down, and he was discharged honourably out of the army. For his services in organising the defences of West Java he was appointed "Ridder in de Orde van Oranje Nassau." During his residence abroad he acquired proficiency in the Javanese and Malay languages, and on his return to Leyden he studied Battak and other East Indian languages under the professors in the University of Leyden. Having perfected himself in the literature of the ethnography of the Netherlands Indies, he volunteered, in 1906, to work in the State Museum of Ethnography, and on January 1st, 1914, was permanently appointed as conservator of the museum, the duties of which office he had fulfilled for several years. He has made for himself an enduring reputation in the compilation of most excellent monographic volumes in the *Katalog des Ethnographischen Reichsmuseums*, dealing with the ethnography of Sumatra and neighbouring islands. Of these Vols. IV, VI, VIII, X, and XII have been published. Vol. XIV is ready for the press, as is part of Vol. XVI. He wrote many articles on Indonesian ethnography in the *Inter. Arch. f. Ethnogr.*, of which the following may be noted: XVII, 222;

* Howell, VI, 696.

† *Id.*, VIII, 1022.

‡ Mather: *Wonders of the Invisible World*, p. 137.

§ Hutchinson: *Historical Essay*, p. 62.

|| "Narrative of Rev. James Boys, rector of Great Coggeshall." In Gilbert, *Witchcraft in Essex*, p. 6.

¶ *Witches of Northamptonshire*.

XVIII, 85, 132; XX, 1; 15, 250; XXI, 99; and he contributed an article, "Een Batakasche Bybel," to the Batak volume of the *Tydschrift Nederlandia*, 1909. An interesting lecture on the art of building in Indonesia was published in the *Tydschrift de Bouwwereld* in 1915.

Fischer was also an authority on the ethnography of New Guinea. His chief papers are also in the *Inter. Arch. f. Ethnogr.*: XVIII, 179; XXII, 230. Of especial value are his "Ethnographica von den Pësëchëm" and "Ethnographia aus Süd- und Südwest-Neu-Guinea," Parts 1 and 2 of Vol. VII of the great work, *Nova Guinea*, published by the Maatschappij voor Natuurkundig onderzoek der Nederlandsche Koloniën. He has written many articles for Dutch encyclopædias. A most important article on Indonesia would have been published in the *Illustrierte Völkerkunde* (Dresden), had it not been stopped by the war. From the foregoing imperfect list of his writings it will be seen that Fischer was an indefatigable worker, but all his work is characterised by careful accuracy, wealth of knowledge, and a mastery of literature. Not only was he a scholar but he also accomplished very much for his native town, at first as a town councillor and afterwards as sheriff.

In April, 1914, J. W. Layard and I visited the Leyden Museum when preparing our "Report on the Ethnographical Collections from the Utaqua River" made by A. F. R. Wollaston," and we received great kindness from Fischer, who devoted much time to us and placed his unrivalled knowledge of the ethnography of Western Netherlands, New Guinea, at our disposal. He facilitated our work in every way, and proved himself a most cheery colleague, both in the museum and in his own home, where he lived with his sister. Since then he has helped me whenever I had occasion to write to him. His death is keenly felt by all who knew him, but more particularly by his friend, Dr. H. H. Juynboll, Director of the Leyden Museum, to whom I am indebted for the foregoing information.

ALFRED C. HADDON.

REVIEWS.

Africa: Agriculture.

Husbandry in the Congo.

Torday.

83

Through the courtesy of the Belgian Minister of Colonies I have received Vols. VI, VII, and VIII of *The Bulletin Agricole du Congo Belge*, which, though principally intended for planters and agriculturists, contains a considerable amount of matter of interest to the anthropologist.

In Vol. VI Monsieur Tharin gives an account of some native modes of agriculture. He first deals with the region of Stanley Falls, which is of less interest to us, as its methods are mostly copied from those introduced by the Arabs during their occupation of these parts. He insists on the agricultural advantages derived by the natives from the Arab occupation, especially through the introduction of rice, indigo, millet, sesame, etc., but I believe he is mistaken in attributing to it the introduction of ground-nuts, tobacco, and beans, though it may be responsible for improvements in the culture of these plants. Rice is the most important product; it is eaten in various forms; simply boiled in Indian fashion (wali), boiled till it forms a sort of thick soup (mashende ya mchere), green rice slightly roasted and squashed (pepeta za mpunga), and mainly made into hard cakes, sweetened with honey or cane syrup (etumbola). Sesame, which is often planted in the rice fields, is only used for the production of oil.

South of Stanley Falls the principal food plant is the banana, which forms the staple food of the Mabila and Bakumu, Baranga, and Mituku inhabiting these regions. The natives distinguish about thirty varieties, but only five or six are cultivated to

any extent. Bananas are eaten fresh, dried and made into flour, and an intoxicating beverage is made of the ripe fruit, which is cut into pieces and then covered with water left to ferment. After eighteen hours a mild drink, "women's wine," is obtained; if left to ferment twice as long the beverage loses its sweetness, but gains in alcoholic strength, and is then fit for men. Though prohibited by law, alcohol is still distilled clandestinely in primitive stills. The banana is propagated from shoots; these are stripped and dried in the sun, then they are put into a heap, where they remain for some weeks before they are planted, as it is considered that should they be transplanted without these precautions they would rot, or, at any rate, grow less vigorously. The young plants are frequently planted in the fresh clearings before the trees which have been cut down are burnt; a month later the fire is set to these, and the flames do not only not harm the young plants, but are said to accelerate the production of the fruit by a month.

Cassava is rarely planted, as the huge herds of wild pigs and wart-hogs very rarely permit of the crops being gathered by the farmer; they are capable of destroying a "shamba" in one night. The little that is produced is eaten fresh by the Mabila.

The wild silk-worm (*anaphe infracta*) abounds, but is only used as an article of diet. The *tephrosia vogelii* (bobaka) is cultivated near the huts, and is used for fishing in the lagunes when the waters are low. The leaves and flowers are collected early in the morning, and at once crushed in a mortar into a green paste. The fisherman places himself where the current enters the lagoon and immerses the paste within a wicker basket, stirring it continually. A quarter of an hour later the poison produces its stupefying effect, and fish begin to float on the surface, when the fisherman and his friends simply collect them in baskets. The small fry and some species of salmonides appear first, while bigger fish do not float till about three quarters of an hour after the poison has been deposited; catfish and lampreys seem to be less susceptible than other fish.

The *raphia vinifera*, which used to be cultivated for its fibre before the introduction of trade cloth, is now only used for the production of palm wine, which forms an important part of trade between the Babole of the interior and the Lokele on the river.

Rice is reaped with the knife, and M. Tharin has calculated that this process requires twenty times the time of cutting with the scythe. Certain tribes, like the Bakumu, Wapinga, Waturu, and Walengola, cultivate rice to a great extent, yet do not eat it, and consider it simply as an article of commerce.

The Bambole plant yams to a considerable extent. After clearing the ground, bits of the yam (not specially preserved for the purpose but collected in an old field) are planted; as soon as the young shoots show, bananas and cassava are planted between them, and two months later any free spot is sown with rice.

In the region of Kirundu the sugar cane receives special attention and syrup, called asali, is prepared from it in the following way: the cane is cut and brought to the village where it is passed through a crushing mill. This is composed of two horizontal wooden cylinders fixed on joists firmly planted into the soil; the cylinders are provided with longitudinal flutings and are distant between 1 and 1½ cm. from each other. One of them, generally the uppermost, is revolved by means of peg-cams by one man, while another presents the cane and twists it during its passage through the mill; the extracted fluid is collected in a jar. This is then boiled for a considerable time, carefully skimmed at frequent intervals, and when it has acquired sufficient density, preserved in bottles. The product resembles honey, is light brown, and, if sufficiently long preserved, crystallises partly, and is then called asali guru. It finds a ready market among the Arabs and their dependants.

On p. 184 M. Tharin mentions various plantations of elais by certain chiefs, and yet he says on p. 185 that the natives practically never cultivate this profitable tree; I assume that the cultivation has been neglected within the last few years. The oil is extracted only from the outer covering of the cherry while the kernels are thrown away. When the clusters have been brought to the village they are kept for two or three days, and thus become more or less rancid; then the cherries are detached by the women, put into big jars, covered with water and boiled for ten minutes. The water having been sieved off, the kernels are extracted and the fruit is crushed into a pulp in a mortar. The pulp is then put into water, squeezed for some time till all the fat matter is extracted from the fibre. The oily water is energetically beaten, and finally the oil is skimmed from the surface. It is now submitted to a gentle heat which dissolves the fat particles, while the impurities sink to the bottom; after it has been decanted several times the oil is ready for preservation. Oil thus prepared is called Litula, and is more valuable than that obtained by heating and pressure. The unpurified oil is called Mawese.

Regions of Kirundu and Lokandu. There are two kinds of granaries: rectangular buildings on piles, made of mud, divided into two or three compartments with sliding doors, and simpler ones, cylindric in shape, also on piles, and covered with a conical thatched roof; these latter have no door. To get at the produce the whole roof has to be lifted, which, to prevent its being blown away by the wind, is weighted with logs.

At Lokandu oil is also produced from the kernels of five different kinds of pumpkins. The grains are lightly grilled, crushed in a mortar, and by the slow addition of small quantities of boiling water formed into a dark paste; this is then thrown into boiling water where it forms a thick mass on which the oil floats after some further boiling; it is skimmed and passed through a tight sieve made of thin strips of cane and finally left for several days to settle, after which it is decanted. By keeping the oil for some time in the dark it loses its dark colour and becomes light yellow.

The region of Nyangwe has a great reputation for its tobacco. The young plant is transplanted when it has developed three to five leaves, and shaded with a banana leaf; when it attains a height of 3 feet the apex is pinched off. The leaves are considered ripe for gathering when they begin to crinkle, get covered with yellow spots and are lightly parched; the whole plants are then cut off and are left for an hour in the sun to fade. Subsequently they are piled 4 to 8 inches high, covered with leaves and weighted; thus they ferment during three days. On the fourth they are put for an hour on the roof of the house to dry in the sun; then they are piled up again and left to ferment for a day or two; after this second fermentation the leaves are easily detached from the stem, laid out in a row on a bed of grass and exposed to the full heat of the sun for five or eight days until the central nerve is completely dry; at night they are taken into the house. The tobacco is now considered ready for packing: the leaves are attached by their petioles and made into twisted packets of 20, 30, or 100, tied up and covered with dried banana leaves. In 1901, when I passed in that region, tobacco was still a currency; this is, however, not the case to-day, as M. Tharin makes no mention of the fact.

The natives of Kasongo (I suppose this refers to the Manyema, but it may be the Bakusu) retard the sowing of their rice by two months so that, they say, the grain should be ripe in March or in April, when the most destructive birds are hatching their eggs and have little time for depredation.

In Vol. VII Monsieur G. de Greef deals with native agriculture on the upper course of the Ituri River and on the shores of Lake Albert. The tribes concerned are:—

(1) The "Bahoema" (this surely stands for Bahima, whom Stanley and Speke used to call "Huma"), an essentially pastoral people, who claim to have immigrated from Uganda, having come to that country from the north. They state that they left Uganda because of an epidemic among their cattle; Monsieur de Greef thinks that the migration must have taken place one or two centuries ago, but I should think that either of these dates is based on pure supposition. They live exclusively on the produce of their cattle—butter, milk, cheese (curds?), meat, and blood; bleeding is practised by piercing the jugular vein with an arrow, or by cupping. The tilling of the soil they consider degrading. They are tall, many individuals being over two metres high; the legs are long and thin; shoulders narrow; their features are what one is accustomed to call Hamitic. They do not form villages, but their huts, connected by narrow paths, are spread over their pastures. As for dress, those in contact with the European imitate the Arab garb.

(2) The Walendu form the majority of the population, though the influence of the conquering Bahoema is by far the more considerable; as a matter of fact the latter kept the former for a considerable time in a state of vassalage, and in certain parts, as in the region of Blukwa, this condition still persists. Cattle-lifting between the two tribes forms the constant cause of wars. The Walendu possess not only great herds, but they are also excellent agriculturists; except for the great chiefs, whose habitation is surrounded by some of their retainers, their houses are equally spread out and isolated. However, in the northern part of their territory, which touches the Equatorial Forest, they possess considerable townships, in which their circular huts are disposed in two parallel rows. The men take an important share in the cultivation of their fields, where they grow maize, sorgho, sweet potatoes, &c.

(3) The Babira, a short, sturdy, and active people. Men and women file their teeth, and the latter distend their lips with the pelele; they attribute the origin of this habit to the slave trade, for girls thus disfigured were valueless to the Arabs. Women anoint themselves with castor oil mixed with red clay and scented with the extract of a creeper, smelling not unlike patchouli. This tribe is, next to the Walendu, the most numerous.

(4) The Banyari, a small but prolific tribe, inhabit the forest region, and are said to be part of the Mombuti.

(5) The Alulu, inhabitants of grass land, agriculturists, very hostile to the Europeans.

(6) The Mombisa.

(7) and (8) The Walese and Mombuti, forest tribes, who, besides being great hunters, cultivate bananas and maize. They are little known by the white man.

Monsieur de Greef describes the various modes of agriculture, though he does not always say what particular tribe practises them. The various implements are shown in illustrations, and the preparation and preservation of the different kinds of foods is given. The native industries are then described and illustrated. The principal ones are pottery, making of soap, baskets, ropes, mats, and salt, and the extraction and working of iron. The three kinds of cattle found in the region are described, and many interesting details concerning breeding, housing, diseases, &c., are given.

M. Lacomblez in Vol. VIII deals more in detail with the Babira of the same region. The clearing of the ground is done by all the men of the village; about 30 per cent. of the trees of the forest, by preference the loftiest, are left to stand so as to protect the plantation from the direct rays of the sun. When sufficient ground for the village has been cleared, this is divided among the inhabitants according to their respective wants, the boundaries being marked with fallen trees or vines. Now the women and children proceed to remove the remaining

smaller vegetation by hoe and by fire; this is not done at once on the whole allotment but only on that part of it which is immediately required for planting. The product belongs to the family which cultivated the land, a special field being reserved for the chief to the maintenance of which all the villagers contribute. Manure is never used, but the ground is left five to seven years fallow after each crop. The clearing is done at any time of the year, but by preference in the dry season so as to make sowing at once possible when the rains begin. The plantations are generally begun near the village but get further and further as more ground is required, to return again to their starting point when the first fields have sufficiently rested. For bananas, however, fresh ground is cleared every time. As the natives are all buried in their houses or near them, the village after a number of years becomes unhealthy and has to be transferred; two years before this is done a new site is chosen in the proximity of the old one (so as not to be too far from the plantation) and surrounded by a banana grove.

The various crops are not kept separate, and bananas, manioc, maize, yams, &c., are found in the same field. Besides these plantations near the village, the Babira, have some less important ones hidden in the forest or surrounded by swamps in case of emergencies like war or the arrival of the tax collector.

A lot of pilfering goes on when the crop ripens; if the guilty person is an inhabitant of the village this is a thing of no importance; should he, however, be a stranger, he will be severely beaten and mulcted in heavy fines. But the greatest damage is done by elephants, pigs, monkeys, and buffaloes. M. Lacomblez adds civets to this list, but this must be a mistake.

The crops are gathered by women and by children and it seems to be the habit to present the first fruit, like the first bunch of bananas, the first beans, etc., of every field to the chief. The quantity of the crop is generally not more than what is required for the sustenance of the owner and his family and there is rarely a surplus for trade.

M. Lacomblez proceeds to describe fully the cultivation of various plants; I should think that it is by mistake that he says that bananas are propagated by cuttings (*boutures*), especially as he later on refers to shoots (*rejets*). It is noteworthy that tobacco is raised in a nursery and transplanted when about five leaves have developed, also that when the plant has attained a certain height the apex is pinched off.* This is not wasted but used for the manufacture of snuff; after having dried and fermented for a few days the tender leaves are crushed in a mortar and the powder thus obtained is sieved through some linen; the part which does not go through is thrown away. The powder is then wetted with a decoction of banana ashes which is said to improve its flavour.

The only domestic animals kept are goats, sheep, and fowls; they serve mostly as currency and only such that die of a natural death are consumed.

E. TORDAY.

South Africa: Linguistics.

McLaren.

A Concise Kaffir-English Dictionary. By J. McLaren, M.A. Longmans, Green and Co., London, &c., 1915.

84

This companion to a *Grammar of the Kaffir Language*, by the same author, is intended for the use of Europeans who may desire to become acquainted with the language of the Bantu in the eastern portion of the Cape Province of the South African Union. Such a work has long been a desideratum, not because of any lack of lexicological material for the study of the language, but rather because that

* M. Amrhyn in another paper mentions that at Kasongo tobacco plants are manured with sheep's dung.

material is too cumbersome and elaborate for the purposes of the general student. The author has endeavoured to give clear, concise, and accurate definitions of the most common words, and on the whole his plan seems to have been admirably carried out. The art of dictionary making is never an easy task, but a Bantu dictionary surpasses all others in difficulty of construction. If the extraordinary number of accretions to the root and the phonetic modifications only affected the final syllables, there would not be much difficulty, but the number and combinations of the initial syllables in Bantu words are an unfailing source of perplexity. Two examples given by the author will show the difficulty. A word appearing as *elusatsheni* must be sought for under the root *u-sapo*, whilst the ultimate root of the word *bangasemlanjeni* is to be found in *um-lambo* (a river), *bangasemlanjeni* "they are near the river," being *ba* (they), *nga* (near), *s* (euphonic between two vowels), *em* (locative form of prefix *um*), *eni* (for *weni*, the locative sign, causing the final labial in the root to become a palatal *lanj* instead of *lamb*).

The method of using the dictionary is explained in the preliminary part of the book. In this there is a condensed account of the sounds, accents, and tones of the language, with a summary of the grammar, and in the last section all the prefixed particles are tabulated.

The book appears adequate for all general purposes and can be recommended as a useful help to students and others who come into contact with the predominant native population of South Africa. In testing, one comes across a few omissions, e.g., *amanzi* (water) is not given with the adjective *manzi* (wet), and *anzi*, to which there is a cross-reference does not appear at all; in *iso*, *il* (eye), the reference to *il-Iso* should be *Ili-so*.

The value of the book will be increased by the Kaffir-English part promised by the author as a supplement.

S. H. RAY.

Folklore.

Animal Folk Tales. By Anne A. Stanley. New York, Cincinnati, Chicago: American Book Company. Stanley. 85

Although this volume bears the title of *Animal Folk Tales*, it must not be supposed that it is a collection of folklore relating to animals. The stories here collected are of purely literary origin, and bear very little resemblance to genuine folk tales. They are said in the preface to have been "adapted to class-room use," and possibly they may have been found satisfactory for that purpose, possibly not. All depends on the spirit in which folklore is or should be employed as an instrument of education. If it is to give some insight into the thoughts and ideas of primitive man, this purpose will not be served by taking the mere skeletons of tales and dressing them up in purely modern form.

M. L. D.

ANTHROPOLOGICAL NOTES.

Archæology in Mexico.

The Mexican Government, through the Inspector of Monuments, Señor M. Gamio, has continued to do good and steady work in excavating the ancient sites. Recent accounts describe the narrow, arched tunnel which has been driven through 73 metres of the east side of the Pyramid of the Sun at Teotihuacan, a few feet above the base and towards the centre. Señor Batres had removed (about ten years ago) 15 metres in thickness of the outer shell of the pyramid, which had doubtless also lost much masonry in the early years after the Spanish Conquest. The present excavation has been through a solid mass of sun-dried adobe bricks. No successive layers of masonry nor outer coverings have appeared, as would have

been the case if the pyramid had been added to from time to time. The adobes are full of myriads of pottery fragments, plain and decorated, thus showing that the pyramid was erected on the extremely ancient site of a great and populous city, whose inhabitants had used decorated pottery in enormous quantities, so that the clay soil had become filled with potsherds. Señor Gamio is careful to preserve an equal bulk of adobe from each metre excavated in order to compare the embedded potsherds.

An interesting house with narrow, intricate passage-ways and many small rooms, has also been uncovered in the "Street of the Dead." This work is, unfortunately, now stopped for lack of means.

About ten years ago, human remains, with pottery, were found beneath the great flow of lava from the volcano of Ajusco, that comes down from the rim of the valley of Mexico to Coyoacan. The flow is possibly not much more than 400 years old. An entire charred skeleton has now been found about 3 feet beneath it, near San Angel; also other bones and skulls, which seem to indicate the site of an old burial-place. Rounded stones from the river-bed close by form a sort of pavement above, but this may have been a narrow paved pathway. A good deal of broken pottery has been also found and a few terra-cotta heads of the so-called archaic type. The skulls are small and comparatively modern.

Anthropology in the United States.

The first number (January-March 1918) of a new anthropological journal is announced from Washington. The *American Journal of Anthropology* will be published quarterly, edited by Dr. Ales Hrdlicka, Curator of Physical Anthropology at the National Museum (where there is a vast store of skeletal material awaiting students), and the Committee on Anthropology of the National Research Council and other prominent anthropologists have promised their co-operation. The prospectus states that although physical anthropology is the most important branch of the science of man, it has been hitherto without adequate facilities for publication and without a journal of its own in the United States, a country especially rich in material. The *American Anthropologist* is devoted to anthropology in the widest sense; but its papers are given mainly to ethnology and archaeology, though a limited space is available for somatological papers. Now that American Universities are giving more attention to physical anthropology than ever before, it is important that the instructors should be able to acquaint themselves with what is being done elsewhere. The population of the United States includes representatives of nearly every race and sub-race on the globe, and there are opportunities for study not to be neglected. It is hoped that sufficient support may be accorded to the new venture for the promoters to carry it on successfully. The annual subscription for foreign countries is \$5.50. Address, "Editor, American Journal of Physical Anthropology, Smithsonian Institution, Washington, D.C."

87

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88

(Donor indicated in parentheses.)

The Processes of History. By Frederick J. Teggart, Ph.D. $7\frac{1}{2} \times 5\frac{1}{2}$. 162 pp. Yale University Press. 5s. 6d. net. (Oxford University Press.)

A Guide to Sanchi. By Sir John Marshall, C.I.E., M.A. $8\frac{1}{2} \times 5\frac{1}{2}$. 152 pp. 15 Plates. Government Printing, Calcutta. 3s. 9d. (The Superintendent.)



AN AMERICAN DRAGON.

ORIGINAL ARTICLES.

North America: Pottery. With Plate L.

G. Elliot Smith.

An American Dragon. By G. Elliot Smith.

89

Among the remarkable collection of Maya pottery in the Liverpool Free Public Museums which Mr. Thomas Gann, M.R.C.S., obtained during the course of his excavations in the mounds of Northern Honduras,* there is a peculiarly interesting object (Plate L) which Mr. Gann does not mention or represent in his series of illustrations. Yet Dr. Joseph A. Clubb, the curator of the Liverpool Museums, who called my attention to the specimen and kindly obtained for me the accompanying photograph of it, tells me that it was found at Santa Rita along with the specimens described by Mr. Gann, to which it presents obvious affinities.

It represents an alligator or crocodile, and a human face protrudes between the jaws of the open mouth. The head of the beast is equipped with such inappropriate appendages as deer's horns, which, though stunted, strictly conform to the stereotyped American way of representing antlers.† To the surface of the skin a series of elliptical (and in some cases circular) pieces of clay have been applied. Like all the other objects in the collection, the model was in the form of a hollow vessel with a large round opening upon the animal's back.

The maximum length of the specimen in its present condition (two spines have been broken off the tip of the tail) is 34.6 cm.; the maximum breadth (across the arms) is 20.3 cm., and the maximum height is 13.3 cm., of which 3.9 cm. consists of the cylindrical tube upon the crocodile's back, the diameter of which is 8.9 cm. The fore limbs are provided with five toes and the hind limbs with four toes each. The antlers have three prongs. The human face is painted light blue, but the crocodile's palate is coloured brick red. Some of the elliptical elevations upon the creature show traces of blue paint. Bracelets and anklets are represented by series of hemispherical masses of clay.

The forms of several different animals are represented in the collection: tigers, turtles, sharks, as well as "alligators" (crocodiles), and human beings. Referring to "the alligator-like animal" (as well as its surrogates, the double-headed "alligator" and the turtle), Mr. Gann says: "it was intended to represent the Aztec *Cipactli*, a mythic animal at times taking the form of a swordfish, a shark, an "alligator or an iguana"; but somewhat rashly, as the following discussion will show, adds the speculation that "it symbolizes the earth, and as in other cases, is "often represented with a human head between the jaws to signify that all flesh "returns to its original earth, and to death." (Footnote to p. 684.)

This suggestion is very wide of the mark, for the human head in the mouth belongs to the Rain God *Chac* (*Tlaloc*) and the animal-form, or his skin-covering, was nothing more than his traditional *camouflage*.

The crocodile in Japan, Indonesia, and India is perhaps the commonest form of the *makara*, which we can regard as a larval form of the real dragon, and in India the direct descendant of the Babylonian "goat-fish," the Capricornus of the Zodiac. One of the most interesting features of the American *makara* we are now studying is that it is equipped with such distinctive features of the Chinese and Japanese dragon as deer's antlers. The spotted decoration of the body is of exceptional interest. I have already called attention to the fact that the elephant-headed god, the Maya *Chac* and the Aztec *Tlaloc*, was the American representative

* Thomas Gann: "Mounds in Northern Honduras," 19th Ann. Rep. Bureau of American Ethnology (1897-98), Part II. Washington, 1900, p. 661.

† E. Seler: "Die Tierbilder der mexikanischen und der Maya-Handschriften," *Zeitsch. f. Ethnologie*, Bd. 41, 1909, p. 414. G. G. MacCurdy: "A Study of Chiriquian Antiquities," *Memoirs of the Connecticut Academy of Arts and Sciences*, Vol. III, March 1911, p. 202, Fig. 342.

of the Vedic god *Indra*.* It was, in fact, a form of the Indian god somewhat modified by Cambodian and Indonesian, and especially locally by a variety of American influences.

In India, *Indra* had assumed many of the attributes of the gods *Soma* and *Varuna*, which were diversely specialised forms of the Babylonian *Ea* (*Marduk*) and the Egyptian *Osiris* (*Horus*): "In his aspect of Moon, 'the lord of stars,' [*Soma*] " has the antelope as his symbol. In fact, one of the names given to the Moon by " the early Indians was 'mr̥ga-piplu,' or marked like an antelope;" in reference to the spotted appearance of the moon.† "The Sanskrit name for the fifth *Nakshatra* " or lunar mansion over which, *Soma* presides is 'mr̥ga-śiras,' or the 'deer-headed.' "‡

Dr. Gladys Davis has collected the evidence in substantiation of the claim that the Phrygian *Dionysos* was derived from the early Aryan god *Soma* (*Haoma*), who came into being somewhere in the neighbourhood of the Gates of *Zagros*. He was, in fact, *Ea* (*Marduk*), who passed through the Gates and became specialised as a highland deity. Miss Davis mentions an Orphic fragment preserved by *Macrobius* which refers to the star-aspect of *Dionysos*, and "explains the significance of the " *visp̄is* or fawn-skin worn by the god and his followers." The dappled appearance of the skin is supposed to symbolise the star-strewn sky,§ and is further regarded by *Orpheus* as representing the connection of *Dionysos* with the sun. Here he tells how the god—

"First dons a robe like to its glittering rays
And bright as fire, then o'er his shoulder casts
The dappled fawn-skin garb of goodly width,
Dotted with countless circles to portray
The stars inlaid in Heaven's hallowed vault."

—(*Macrobius*, Sht. I, 18.)

But not only *Soma* and *Dionysos*, but also their American representative *Chac*, wore "the dappled fawn-skin dotted with countless circles to portray the stars" in the pottery figure we are considering. But why should a crocodile be spangled with the antelope's "countless circles"?

It must be remembered that at the time when *Ea* (*Marduk*) was passing into the northern highlands to become the Aryan *Soma* (*Haoma*) or his spotted antelope, his other *avatar*, represented by a monster compounded of *Ea*'s fish and antelope—the so-called "goat-fish" or *Capricornus*—was also being carried to India, where it became the *makara*. Not only did the *makara* assume protean forms, such as the "goat-fish," "tiger-fish," and "elephant-fish" among many others,|| but it

* *Nature*, January 27th, 1916.

† It was primarily due to a confusion of the attributes of the moon and the sky, the spotted appearance being originally a graphic representation of the star-spangled sky when the first deities were devised by man and the Great Mother was identified in turn with a cow and the moon. But the human mind displays an instinctive tendency to integrate even the most diverse incidents in its experience; no gap is too great to be bridged by this process; hence primitive man solved the problem of the Great Mother's apparently incompatible homologies by making "the cow jump over the moon" and become the sky. Hence the Great Mother and her cow-*avatar* were represented star-spangled, as the sow was in the *Ægean* (*Schliemann, Ilios*, p. 616), and the deer (antelope or rabbit) in Asia and America.

‡ Gladys Davis: *The Asiatic Dionysos*, 1914, pp. 202 and 203.

§ As the star-spangled skin of the Divine Cow *Hathor* (and perhaps also of the Mycenaean *Pig*) represents the sky.

|| See A. Cunningham: *Report Arch. Survey of India*, Vol. III, Plates IX and XXIX; and compare with William Hayes Ward, *Cylinder Seals of Western Asia*, p. 384, where the "goat fish" is shown as the vehicle of the Babylonian *Ea*, as the *makara* in India is the vehicle of *Varuna*.

also became confused with the crocodile and the *nāga*. The identification of the crocodile with the antelope-fish* provides the reason for embellishing the American *makara*, with the spots of the antelope. In India the *makara* is the vehicle of Varuna, and the god was also identified with the monster, as Soma was with the antelope. In America both gods and their respective symbols are merged together in the spotted *makara*, as sometimes occurs also in India.†

When the Babylonian cults made their influence felt, directly or indirectly, in Asia Minor and the Mediterranean area, the antelope of Ea was often replaced by the deer of Dionysos and Artemis. The horns of the dragon into which the "goat-fish" developed were transformed from those of an antelope into those of a deer by the time the dragon reached China and Japan.‡ It is possible, if not probable, that the idea of this composite monster (which certainly reached Eastern Asia from Babylonia) was transmitted to China by the overland route (*viâ* Turkestan, the Tian Shan line, past Lob Nor, to Shensi).

The influence of China and Japan in Indonesia in the early centuries of the Christian era was probably responsible for giving deer's horns to the *makara* (which Indonesia had acquired directly from India) while it was being conveyed east towards America. Hence the American dragon displays the results of a blending in Indonesia of the diversely specialised Indian and Chinese modifications of the original Babylonian antelope-fish of Ea (Marduk).

In a Japanese dragon-story, which was certainly inspired by certain Indonesian legends,§ the dragon has a crocodile-form and is called a *wani*. In these myths the *wani* may be the hero's vehicle, as the *makara* was Varuna's, or the hero or heroine of the tale may be transformed into a *wani*. The literature relating to these mythical crocodiles is discussed by Dr. M. W. de Visser.¶

He quotes the following statement from Aston's *Shinto*: "There can be little doubt that the *wani* is really the Chinese dragon. It is frequently so represented in Japanese pictures. I have before me a print which shows Toyotama-hiko and his daughter with dragons' heads appearing over their human ones. This shows that he was conceived, not only as a Lord of Dragons, but as a dragon himself" (de Visser, p. 141). De Visser makes the following comment on Aston's statement: "We are here not so much on Chinese, as on Indian territory. . . . 'The dragon's heads appearing over the human one' form quite an Indian motive, transferred to China, and from there to Korea and Japan" (p. 142). The pottery figures from Honduras, as well as many statues from Central America, show that this conception spread, not only to Eastern Asia, but also across the Pacific to America. Among the many ways in which the *nāga* is represented in India, there is one in which the upper part of the god is shown as a human head with a snake's head above it. In Babylonia Ea was represented as a man wearing a fish's skin with the head above his own. The god and the animal whose skin he wore were identified the one with the other. In the Honduras figure, both the human figure and the crocodile represent the Rain God, *Chac*.

* In parts of Africa the dragon is an antelope (Frobenius, *The Voice of Africa*, 1913, Vol. II, p. 467, *inter alia*).

† Cunningham, *op. cit.*, Plate XXIX.

‡ It is not surprising to find the deer itself (as well as composite monsters) playing a considerable part in the mythology of America. Seler states: "Der Hirsch ist in hervorragendem Masse ein mythologisches Tier. Er repräsentiert das Heer der Sterne, die, vom Morgensterne gejagt, von Osten nach Westen getrieben werden."

§ F. W. K. Müller: "Mythe der Kei-Insulaner und Verwandter," *Zeitsch. f. Ethnologie*, Bd. XXV (1893), p. 533.

¶ "The Dragon in China and Japan," *Verhandelingen der Koninklijke Akademie van Wetenschappen te Amsterdam, Afd. Letterkunde*, Deel XIII, No. 2, 1913, pp. 139-142.

That the *makara*-like whale-dragon of the Old World was transferred to America is also shown by the remarkable Maya story, translated by Juan Martínez Hernández,* in which the reference to a "female whale with alligator's feet" recalls the pictures on the Buddhist railing at Mathura (circa 70 B.C.—70 A.D.); whereas the exploits associated with this monster are equally definitely a travesty of Indra's famous achievement in overcoming the demon Vritra.

The world-wide stories of the whale-dragon have been collated by Frobenius.†

In his *Study of Chiriquian Antiquities*‡ MacCurdy gives an interesting account of a class of Chiriquian pottery which Holmes called "the alligator group," although, for the reasons clearly set forth by MacCurdy, the animal depicted was probably *Crocodilus Americanus*, var. *acutus*, and not the alligator (*Alligator punctulatus*), which has a shorter muzzle. In the ancient Mexican picture-writing also it was the crocodile that was figured as *cipactli* (*op. cit.*, p. 126).

MacCurdy is puzzled to explain "the appearance of a long crest that is attached to the back of the neck, the meaning of which is not clear" (p. 127). Comparison with the Honduras pottery suggests that this appendage is merely the vestigial remains of the deer's horns of the dragon, conventionalised in the characteristically Babylonian fashion as a single crook-like spur proceeding backwards above the neck (compare his figures 208 and 209, p. 127, with the dragon on the Ishtar Gate at Babylon—L. W. King's *History of Babylonia and Assyria*).

In some of the Honduras specimens the crocodile is given a second head, which is fixed to the end of its tail, in strict conformity with the principles of dragon-construction in the Old World.§

I do not think that MacCurdy's account of the mechanism of conventionalisation of the Chiriquian crocodile gives adequate recognition to the complexity of the process.

The essential factor in the conventionalisation has been the blending of several different conceptions. The design of the crocodile itself is already embellished with vestigial structures that reveal its origin in the Old World. To this is added the effects of the blending in Chiriqui with locally developed designs, as well as with those which have been introduced from abroad, not only in association with the *makara*, but also independently of it. I think the sagging of the body of the Chiriquian crocodile may have been the result of the use of animal forms for *metate*-designs described elsewhere in MacCurdy's report.||

Every stage in the process of blending of the crocodile and the pot is seen in the Chiriquian series, and the completed stage is revealed in the Honduras specimen with which this note is especially concerned.

It is important to remember that the conception of the Great Mother as a water-pot, which was widely accepted in the Old World (in Egypt,¶ the Mediterranean area,** Western Europe,†† India,‡‡ Indonesia, Eastern Asia, and Oceania§§),

* "La Creación del Mundo Segun los Mayas," Páginas Inéditas del MS. De Chumayel, *International Congress of Americanists, Proceedings of the XVIII Session*, London, 1912, p. 164.

† *Das Zeitalter des Sonnengottes*, Berlin, 1904.

‡ George Grant MacCurdy: *Memoirs of the Connecticut Academy of Arts and Sciences*, Vol. III, March, 1911, p. 125, *et seq.*

§ See Budge's *Gods of the Egyptians*, Vol. I.

|| See Plate III.

¶ F. Ll. Griffith: "A Collection of Hieroglyphics," *Arch. Survey of Egypt*, 1898, p. 3; also §§.

** Schliemann, *op. cit.*; also §§.

†† The Holy Grail story; also §§.

‡‡ Bishop Whitehead: "The Village Deities of Southern India," *Madras Government Museum Bulletin*, Vol. V, No. 3, 1907, where the seven goddesses are represented by seven pots.

§§ In my *Evolution of the Dragon* I have discussed the origin of the Mother Pot.

was blended in the Ægean area with another of her forms, the octopus; and in the so-called "owl-shaped vases" found in such profusion by Schliemann, we find the "Mother Pot" represented as a jar in the form of a highly conventionalised octopus which is also a woman, whose pudendum is sometimes embellished with a swastika or a volute, two other symbols which Houssay claims as conventionalisations of the octopus.* Similar elements of culture were being mingled in Chiriqui; and it is interesting to compare the compound formed by the American designers of essentially the same ingredients as their Minoan and Mycenaean forerunners used to make their cultural mixture several centuries earlier. For the Chiriquians not only received the suggestions of making such objects from the Old World, but also learned the principles of mingling the motives which inspired them.

I have already referred to the widespread conception of the earliest goddess as a bowl. In conformity with the confusion between the moon-goddess of Egypt and the moon-gods of Aryan India and Persia, it is not surprising to find the god Soma represented as a golden bowl.† The moon itself was regarded in India as a bowl with a spotted antelope or rabbit in it,‡ or as an animal-shaped vessel.

This Indian conception of the moon also spread to China. Ancient Chinese embroideries represent the moon as a hare pounding medicinal herbs in a mortar under a cassia tree.§ In this form the hare is probably the representative of the Egyptian Hathor, whose priestesses pounded the materials for the elixir of life.

This idea also was carried across the Pacific in Pre-Columbian times. In ancient Mexican codices the moon is represented as a bowl in which a hare or rabbit, spotted in the characteristic Indian way, is pounding the Agave plant to make the sacred drink, *pulque*.

In Mexico the Pulque God was in many respects like the Indian Soma, or the Greek Dionysos; and there is no doubt that the American god was derived from the Vedic drink-god. The Pulque God was not only the moon, but was also known as the "Four Hundred Rabbits."¶

Kunike reproduces a remarkable "Mexican Saga" (Sahagun VII, 2), which explains the present diminution of the moon's brightness by the statement that the gods flung a rabbit in the face of the moon,¶ which originally shone as brilliantly

* Frédéric Houssay: "Les Theories de la Genèse à Mycènes et le sens zoologique de certains symboles du culte d'Aphrodite," *Revue Archéologique*, 3rd Series, XXVI, 1895, p. 24.

† Davis, *op. cit.*, p. 239.

‡ In another Indian legend a celestial being, an emanation of Brahma, brings down from heaven in a golden vessel the food of the gods—pyassa, compounded of rice and milk, both of them "givers of life." Wives who eat this fertilising mixture give birth to sons who are incarnations of Vishnu, and overcome the king of the demons.

§ De Gubernatis, *Myth. des Plantes*, Tome II, p. 50; John Steele, *The I-Li*, London, 1917, represents (Vol. I, plate facing p. 144) a deer-shaped tally-holder from China, with striking analogies to the Honduras pot.

¶ Seler: *Codex Vaticanus*, Vol. I, p. 167. In his account of this god, Seler quotes from an ancient document describing how four male demons killed the Great Mother, the mother of all the gods and demons, and thereby founded the institution of human sacrifice. They took her heart out and presented it to the sun . . . in this way giving him eternal life, and that, if he did not die, all persons drinking wine must die; but the death of this Ometochtli was like the sleep of one drunk, and afterwards he recovered and became fresh and well. This is a curious blend of the Egyptian story of the Destruction of Mankind and the Babylonian legend of Tiamat.

¶ Elsewhere I have referred to the remarkable practice of the Pyramid Age in Egypt of offering the fore-limb torn from a living calf as a blood offering, and of the survival of this custom in a modified form among the Dravidian people of India at the present day. In Babylonia Eabani is said to have torn a limb from the Celestial Urus and to have thrown it in the face of Ishtar (Maspero, *Dawn of Civilisation*, p. 582). Is the story of the flinging of the rabbit in the face of the moon (the Great Mother) a garbled version of this ancient legend?

as the sun. He states that the "Sanskrit Indians" have the same legend, and that the Japanese and the Indians of Central Brazil refer to the rabbit in the moon.*

I have already referred to the confusion of sex that occurred when many attributes of the Egyptian female moon-god were acquired by the Indian drink-god Soma. A remarkable illustration of this confusion is provided by the Mexican god Xipe, who carries the characteristic sistrum of Hathor.† Kunike says: "Das Kaninchen ist also der Mond und die Pulquegötter sind Mondgötter, auch sie hängen wie Xipe (als Mond-und Vegetationsgott) mit den Ideen der Lebensmittelfülle unmittelbar zusammen" (p. 927).

As in Egypt, so also in Mexico, the moon is represented as an eye. When represented as a bowl the latter may simply be a part of the conventional eye-design (see Kunike, Fig. 9, p. 926); or it may be a real bowl containing a rabbit, a seashell or a flint knife, three of the diverse forms which the Great Mother assumes in the Old World, the rabbit (or its surrogates, the antelope, the gazelle, or the deer) being her good or evil *avatar*, the shell her original form, and the flint-knife also an animate form of the goddess as well as the original thunder-weapon. Thus we find upon the shores of the New World a confused jumble of beliefs and fancies that began to drift across the Pacific from the Old World more than twenty centuries ago. As we examine the pictures in the ancient Maya and Aztec codices, a never-ending feeling of amazement is awakened as one after another almost every incident in the mythology of India, Babylonia, and Egypt, the legends of their gods and demons, the history of their dragons and thunder-weapons, make their appearance, flung together in kaleidoscopic confusion, and elaborated with childish directness and barbaric luxuriance of embellishment, into new combinations and distinctively American designs.

No one who conscientiously studies the mythology of the Old World and appreciates the fortuitous circumstances which determined the arbitrary forms assumed by many of the beliefs and ideas can refuse to admit that the confused mosaic of the identical elements of culture in America must have come from the other side of the Pacific, and for the most part received the impress of Indian civilisation before the fragments were rearranged and built up again into a new pattern in Mexico and Central America.

In my book of Rylands lectures on "The Evolution of the Dragon," I have discussed at greater length the general problems mentioned here. It was only after the relevant chapter of the book was in printed proof that I learned of the existence of this pottery figure in Liverpool, which affords a most remarkable demonstration of the existence of such a mythical creature as the development of my argument had previously led me to expect to find in America.

G. ELLIOT SMITH.

Africa, East.

Crossland.

Notes on the East African Outrigger Canoe. By Cyril Crossland.

90

The following notes are taken from a letter from Cyril Crossland to Professor Seligman (June, 1918) by way of comment on my paper on "The Outrigger Canoe of East Africa" (MAN, 1918, 29).—A. C. Haddon.

"I am inclined to think that Mr. Montgomery's observation that the 'hori' is only used in calm weather, and inside the reef, is due to its not being adapted for long, swift journeys, as the *galawa* is. I believe our *huris* come from India *via* Arabia. Zanzibar ones may also, but I remember watching one being made [in Zanzibar?] from the trunk of a mango tree. Our *huris* get patched and repatched

* Hugo Kunike: "Einige grundsätzliche Bemerkungen über Sonne, Mond und Sterne in alten Mexiko," *Zeitschrift für Ethnologie*, Bd. 43, 1911, p. 926.

† Joyce: *Mexican Archaeology*, p. 40.

till some of them are all planks but the bow and stern. They must attain a great age before being finally abandoned.

"The shape of the *galawa* is distinctly different to that of the Red Sea dug-out *huri*, or of any canoe not fitted with outriggers, being much higher and narrower. The *galawa* without its outriggers would be useless; it is not merely a *huri* with outriggers attached. Sailing in a fresh breeze at Zanzibar is a lively business; they go like a fast motor launch. One member of the crew steers; the other stands on the windward boom, and I have seen this man moving to and fro in the most active and clever way to keep the balance as the force of the wind varied.

"A number of the names of parts of the *galawa* are Arabic. I had in a *ragis* (half Arabian) and went over the names with him. Those I do not note he knew nothing of, as one would expect, they mostly being obviously not Arabic. Paddle, *kafi* = Arabic *kāfā*, the blade of a paddle; rudder, *sukāni* = *sukwan*; tiller, *kana* = *kāna*; wash-strake, *daraba* = *darāba* (this addition is optional to either *huri* or *sambūk*; some have it, some have not); stern, *tezi* or *aigiz* (Muscat?) = *iz* in Red Sea; bottom, *buttin* = *batn*, literally 'belly,' used for inside for anything; side, *jumb* = *gamb*, side of anything; knees, *mshaliman* (meaning 'ribs,' I presume) = *shalimāh*, pl. *shalimān*.

"All outrigger floats are oblique in East Africa, and act as keels or leeboards when laid down on the water by the wind.

"Don't you think anthropologists may be stretching a point sometimes in declaring that similar inventions mean actual contact between races? Invention is a rare and precious thing, but it does occur sometimes.¹ For instance, I have seen a boy at Dongonab, Red Sea, fit outriggers to his *sambūk*, the only outriggers I have seen in the Red Sea. Also the only keel or leeboard I have seen was made by the ghaffir at the salt works, who frequently had to do a long slant with a beam wind from the salt works to Dongonab.

"Outriggers are not found in the Red Sea, for the following good reasons: (1) Absence of wood. This being overcome, we have to consider that the *galawa* is a highly-specialised craft, and its range of usefulness consequently restricted. Outriggers would be an intolerable nuisance to (2) pearl-divers, (3) fishermen who net on the surface of reefs, (4) *sambūk* men, (5) and not worth while for any journey not involving a long run in one direction.

"Haddon speaks of *galawas* being brought to East Africa by *sambūks*. It would be purely as cargo, of course, with outriggers dismantled; with or without its outriggers a dug-out of the narrow, high-sided *galawa* type would be of no use to *sambūk* sailors, so its introduction must have been deliberate, not a mere consequence of *sambūk* traffic.

"The special use of an outrigger canoe seems to me for line fishermen who have to go a long distance out to sea with the light land breeze in the morning and come back when the sea breeze rises, i.e., have both journeys with a wind more or less astern. This implies a settled population such as hardly exists in the Red Sea.

"I presume the *galawa* came from India, where catamarans abound, and the Red Sea *huris* came from the same place, too." [It appears to me that in this sentence Mr. Crossland rather gives away his case for local invention. May not the Dongonab boy he refers to have heard of an outrigger attachment to a canoe?—A. C. H.]

A description, with figures, of the rig and method of sailing the *sambūk* or *dhow* and of pearl and other fishing in the Red Sea is given by Mr. Crossland in Chapter V of his interesting book, *Desert and Water Gardens in the Red Sea* (Cambridge: 1913).—A. C. H.

Peru: Art.

Means.

Pre-Columbian Peruvian Chronology and Cultures. By Philip
Ainsworth Means, M.A., F.R.A.I., Boston, U.S.A.

91

Some of the readers of MAN may have seen my brief paper entitled "A Survey of Ancient Peruvian Art" (New Haven, 1917), or Mr. Henry Balfour's kind review of it (MAN, 1918, 45). For the benefit of those interested in this matter, I wish to state in brief form what data, collected during a recent trip in Peru and Bolivia, now lead me to consider the correct chronology and culture sequence for those countries.

In my former publication I accepted almost wholly the system founded by Max Uhle, the late German Director of the Museo Nacional, at Lima, and I had objects from several good collections in the United States, and some in the British Museum and in the Louvre as further material. Now, however, I have not only examined several sites in Peru and Bolivia with care, but I have had exceptional opportunity to study the following great private collections:—

In Lima: The collection of Dr. Don Javier Prado y Ugarteche and that of Dr. Don Julio C. Tello.

In Piura: The collection of Dr. Don Victor Eguiguren E. and that of Don Luis Elias y Elias (at Morropón, Dept. of Piura).

In La Paz: The collection of Sr. Mayor Federico Diez de Medina, that of Sr. Arturo Posnansky, and that of Don Augustín de Rada.

Likewise, the Museo Nacional, at Lima (superintended by Don Emilio Gutierrez de Quintanilla), and the Museo Nacional, at La Paz (directed by Don Alberto Jáuregui y Rosquellas).

Two of these collections, the Prado and the Diez de Medina, are unsurpassed anywhere, and are still growing.

On the basis of my recent studies, then, I feel justified in correcting my previous acceptance of Uhle's system. This Table shows the chronology and culture-sequence as I now see it:—

COAST CULTURES.

MOUNTAIN CULTURES.

— (Ca. 200 B.C. to Ca. 200 A.D.) —

(1) Archaic Culture. — Of Central American origin and character. This culture contained the elements whereon were erected the later cultures of the coast.

(3) Early Chimu-Nasca Culture. — An outgrowth and development of the Archaic Culture. Wonderful pottery and buildings of adobe. Gold and silver known. Art at high level. During the later part of this period trade with the interior brought the coast into touch with the mountains.

(5) Middle Chimu-Nasca. — In this period there was much inter-action between the coast and the mountains, so that Tiahuanaco features appear on the coast. These are especially numerous at Pachacamac and around Lima. They are noticeable in the Trujillo district as well.

(2) Archaic Culture. — Brought from Central America by way of the eastern watershed of the continent. Very similar to Archaic Culture of the coast.

(4) Early Tiahuanaco Culture. — Not in touch with the contemporary coast cultures. Stone buildings began to be made. Pottery had many traces of the Archaic still present. Trade with the coast caused a general improvement in the culture-level toward the end of this period.

(6) Middle Tiahuanaco. — In this period Tiahuanaco art reaches its highest level, and begins to deteriorate through an excess of conventionalization. Objects belonging to this period are found in both mountains and coast from Colombia down to Chile and Northern Argentina.

COAST CULTURES.

(7) Late Chimu-Nasca.—A reflection and continuation of the last period (Middle Chimu-Nasca). Progress in the art of building considerable. A series of valley-states grows up along the shore, some of them being united in groups under one ruler.

(9) Inca Empire.—In the middle of the fifteenth century the Incas completed their conquest of the coast states, and introduced their type of culture very generally all over the coast, from Ecuador down to Chile.

The points to which I wish especially to call attention are: That we can date the Archaic Culture rather accurately by means of a comparison with the date of the same culture in Central America (where the recent work of Spinden, Morley, and Bowditch has dated it precisely); that (3), (5), and (7) are not three separate cultures, but are merely three phases of the same culture; that the same is true of (4), (6), and (8).

It is almost certain that the migrations which resulted in the introduction of the Archaic Culture into South America were merely accidental and unsystematic. Undoubtedly there was a certain amount of movement back and forth right down to Spanish times, for Nunez de Balboa and Pizarro both found that the natives at Panama had fairly definite notions as to the Inca empire.

Mr. Balfour, in his review of my work, notes that I make no reference to the Phœnicians. I would like to remark at this point that American ethnologists have been greatly astonished by the acceptance on the part of their British collaborators of the utter nonsense which has been written about Phœnician, Chinese, and Cambodian influences in ancient America. The work of Hrdlicka, Dall, and others has proved that the American aborigines came from Eastern Asia, but it was through accidental hunting-migrations, and the movements began long before any great degree of culture had been reached on either continent. Of course, it is not denied that occasional junks and Polynesian canoes may have reached American shores in later times, but they would have little or no cultural effect.

PHILIP AINSWORTH MEANS.

Guatemala: Linguistics.

The letter "A" in Pokomchi. By A. C. Breton.

Breton.

92

The following is translated literally from a Pokomchi vocabulary written about 1690 at San Cristobal Cahcoh, in Northern Guatemala, by a missionary priest well acquainted with the language. Laconic speech is also characteristic of Mexico among the common people when talking familiarly, and they use the Spanish *ya* similarly to this *A*. The manuscript vocabulary is in the Berendt Collection of the Museum Library, University of Pennsylvania.

A.—The letter *A* alone in Pokomchi has many meanings and uses. It is:

(1) An exclamation like *O* in Spanish and Latin. *A Dios nímahual* = O God Almighty.

(2) Placed before the verb in a sentence it expresses the past tense. *A xñuban*, *A xñucor* = I have done it, said it already.

(3) Joined to an interrogative, it means, Where. *A pa xoh?* = Where did he go? *A pa vilcat* = Where art thou? *A pila* = Where? And with the dubitative adverb *na*, *A na xoh* = I do not know where he went, or with the verb alone, with the interrogative inflection of a person enquiring. *A vilic* = Where is he? *A xoh acun* = Where did the boy go? And if not known he answers *A vilic*, without the interrogatory inflection, as if saying "I do not know for certain where he is."

(4) Placed after the verb, this *A* serves for him who answers by asking a question, or he who asked and did not hear well what was said, or he who simply answers. Example of the first: "Do this," and he says *No quiero* (I do not wish to, or I will not) = *ma nvah*. Enters then the answer to this *no quiero*: *Ma nvah A?* = What is this of *No quiero*, is there *no quiero* in the order? *Ma xrah xoh* = He would not go; *Ma xrah xoh A* = What does this mean, He would not go? *Quimic Juan* = Juan is dead. *Xquirnic A* = Is it possible? In this way, taking the same phrase and adding the *A* with the interrogative. Example of the second: "Call the Fiscal here." If he did not hear well, he answers: *Fiscal an yuqueh*, *A* = Do you wish me to summon the Fiscal? The third, the simple answer: "Is your father at home?" *Vilic A* = Yes, he is in the house; or if not, *Machi A*.

A is also used in calling: *Quim A*, *quim chalen A* = Come here. *Acun A* *Acuntac A* = Halloo, boy! boys! *A* is also an adverb: *Unchel vinac xoh*, *xoh vo A avacun cuctaque* = All the folk went away and thy son went with them. *Pedro xbanuc xuban vo A ruc* = Pedro made this work and I together with him.

Also for continuous time, speaking now in the preterite, now in the future, and for the continuation of anything that has always been customary or done in a certain way, and must be so continued or used, and in its stated terms. *Noh nehalic*, *noh nehalic A e zacum cacharic* = Life continually comes and goes (that is, some die whilst others are born). "So it has been done or used always without fail" = *Xax he vo banoh xehalic xehalic A*. "So it must be done always in the future" = *He abanaroc noh noh A*, (or), *He abanaroc hunelic A*. "Always in each year without fail" = *Chuhab chuhab A*. "In its time without fail" = *Chuquihil chuquihil A*. Some give it a faint aspiration = *ha*. See in the lexicon of Padre Fray Diego Ximenez the adverb or word *O*, for all the meanings, or most of them, that he gives are the same for this *A*.*

A. C. BRETON.

Malta: Landmarks.

Hardy.

The Maltese Cart Ruts. By Commander H. N. M. Hardy, R.N.

93

In MAN, 1918, 52, Professor Boyd Dawkins, in his note on these cart ruts, appears to overlook one or two points which I have noticed in connection with them.

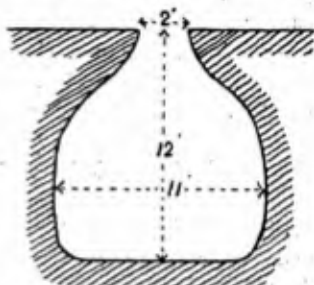
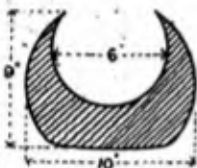
They are always found, as far as my knowledge goes, in conjunction with Stone Age buildings in various parts of the island, and I do not think they are ever found far away from these buildings. The most marked case where they appear to have a definite connection is on a rocky point in Marsa Scirocco, where the so-called car ruts run over the point under the waters of the bay and emerge on the other side of the bay, where they are now concealed under modern buildings, but I was informed by people who had measured them that their distance apart was exactly the same on both sides of the bay. On the rocky point where they are still to be seen there are some seventy chambers hewn out of the rock. The chambers, which are called wells locally, are bell-shaped, about 2 feet in diameter at the mouth,

* With the possessives, *na*, *aca*, *ra*, *A* means my thigh, thine, etc., for all that part of the body. *Hinah ra chicop* = One hind quarter of an animal, *Ti ca* = My thigh pains me.

widening to 11 feet at the base, and are from 8 to 11 feet deep, with the opening at the top and there can be no question that these, at least, are not due to natural action, but to human agency. A large number of the wells are below the present sea-level, and could not possibly have been constructed in recent times without modern diving suits. I have no data by me as to the direction by compass in which these ruts run, but

I remember they are in some cases curved, as a road curves, and are always exactly parallel.

While I cannot question Professor Boyd Dawkins' geological knowledge, I do not think that they can be lightly dismissed as being the ordinary joints eroded by rain-water, especially as the lines are absolutely continuous in all cases which I have seen and, I believe, when caused by weathering of the rock under natural conditions, the ordinary joints widened by rain-water are, as a rule, not continuous; but the whole question of the work of early man in Malta is one that requires investigation. The use of the pits mentioned above is absolutely unknown. In the summer of 1917 I cleared away the accumulation of earth and stones in two of them, and found only a few animal bones—goat and dog—and a few fragments of neolithic pottery, with, at the extreme bottom of the well, one undated stone utensil, of which attached is a rough section. It is a sphere of limestone, flattened on the lower side, and hollowed out into a rough bowl.



Whatever the purpose may have been for which the wells were constructed, there is no doubt that the sea-level when they were first hollowed out was considerably lower than it is to-day. Even those which are now above water would be drowned in a southerly gale, so that they can hardly have been used for the storage of grain, though they might have been burial pits. A number of them are on the top of a cliff on the south side of the island in a somewhat inaccessible position, which renders it unlikely that they were used for storing food.

Another well-marked case of these ruts being found in conjunction with neolithic buildings is an unnamed neolithic building on the south side of the Wied-x-dalam, where they lead about S.S.E. in the direction in which most of the traffic approaching the building would probably come. If they have no archaeological significance, the coincidence of their being found in the near neighbourhood of Stone Age buildings, both on dry land and under water, is at least remarkable.

H. N. M. HARDY.

REVIEWS.

Indonesia: Ethnography.

The Megalithic Culture of Indonesia. By W. J. Perry. Manchester University Press, and Longmans, Green & Co. 1918.

Perry.

94

Those who are trying to demonstrate the unity of origin of the megalithic monuments of the world have hitherto met a great difficulty in the supposed absence of these structures in Indonesia. It is an important part of the scheme of the history of the megalithic culture, which we owe especially to Elliot Smith, that it was in the main sea-borne. If, therefore, the culture spread eastwards from the Indo-European area into and across the Pacific Ocean, it must have passed through the East Indian Archipelago, and we should expect to find definite traces of its passage in this region.

The book before us is the first instalment of a research devoted to the investigation of this difficulty. As soon as Mr. Perry became seriously engaged with his problem, he found certain limitations and extensions of his thesis necessary. The earlier cultures of Indonesia have, in many places been so overlaid and obscured by later Hindu, Mahomedan, Malay, and Chinese influences that it was found necessary to exclude from the survey regions where undoubted traces of these influences existed. On the other hand, Mr. Perry deals with a number of the peoples of Assam who are not ordinarily included among Indonesians, though their inclusion is thoroughly justified by their linguistic or cultural affinities. Most of the facts of Indonesian ethnography are recorded in the Dutch language and in periodicals not readily accessible in this country. Mr. Perry's thorough knowledge of this literature soon showed the falsity of the current view that megalithic structures do not occur in the Malay Archipelago, and the second chapter of the book contains a description of typical megalithic monuments, found especially in the islands of Sumba and Celebes. It soon became evident, however, that little progress was possible if attention were limited to typical megalithic monuments, and Mr. Perry set to work to collect every sample of the use of stone in those parts of Indonesia included in his survey. When he turned later to other elements of culture such as sun-cult, he followed the same procedure. He was not content merely to record definite examples of this cult, but collected every instance in which the sun had had any influence upon the lives of the people.

The results of the survey so carried out may perhaps be summed up most clearly if they are considered under three headings, determined by the three main criteria which served as Mr. Perry's guiding principles.

The first of these principles is that of common distribution. After collecting every example of the use of stone in the part of Indonesia included in his survey, Mr. Perry found evidence of community of distribution between definite megalithic monuments, and other uses of stone for such purposes as graves, offering places, and seats. He concluded that the builders of the megalithic monuments of Indonesia introduced the use of stone for many other purposes, and henceforward speaks of them as the stone-using immigrants. When he turns to other subjects he still makes use of this principle, and assigns certain elements of culture to the influence of the stone-using immigrants on the ground that their distribution corresponds with that of the cultural use of stone. The practice in which the value of this criterion comes out most strongly is terraced irrigation, the distribution of which corresponds very closely with that of definite megalithic structures.

At an early stage of the argument a second principle* appears, one which may be called the principle of class-association. The construction of definite megalithic monuments, certain uses of stone, and several elements of culture were found to be associated with sections of the community, with chiefs, warriors, or priests. Whenever an element of culture is found to be especially associated with one of these sections of a people, Mr. Perry connects it with the immigrants who introduced the cultural use of stone.

The third principle, which is utilised more and more as the book progresses, may be called the principle of organic connection. An element of culture is assigned to the stone-using immigrants when it can be shown to be organically connected with another element of culture already assigned to this people. The mode of application of this principle may be illustrated by the argument concerning the cultivation of rice. As already mentioned, the practices of terraced cultivation and irrigation are assigned to the stone-using immigrants, chiefly through the application

* This principle is really a special case of that next to be considered, but it is so prominent in the argument that it may be given a special place.

of the principle of common distribution. Indonesian irrigation is used especially for the cultivation of rice, and the principle of organic connection, therefore, points to rice as having been imported by these immigrants. The next step in the argument starts from the belief of several Indonesian peoples that their ancestors learnt how to grow rice from the sky-people of their traditions—people who came from the sky and returned thereto when they died or left the earth. Mr. Perry had already come to the conclusion that the sky-people are the representatives in tradition of the introducers of the use of stone. The principle of organic connection, therefore, again points to the association of rice with the introducers of stone-work. At a later stage of his argument Mr. Perry is led to associate the concept of soul-substance with the stone-using immigrants, and to regard the priests as the repositories of knowledge concerning this and other introduced beliefs. The argument is therefore greatly strengthened when it is found that rice possesses a soul-substance upon the presence of which its health depends, and that it is an important part of the duties of the priest to care for the health of the rice. Moreover, both the priesthood and the concept of soul-substance are associated in tradition and practice with the sky-people, who had already been shown to be connected with the cultivation of rice.

These examples must suffice to show the general character of the argument. By its means Mr. Perry is led to ascribe to the stone-using immigrants many elements of culture in addition to those already mentioned. Among these are a number of beliefs about the sun, all of which appear to be related to one another, though only here and there do they form the basis of a definite sun-cult. In a most interesting chapter on fertility, the introduction of the phallic motive in art is ascribed to the stone-using immigrants, while tradition points to their having practised incestuous unions. The motives of many tales, such as punishment for laughter at animals, especially by means of petrification, and tales of half-men, are also ascribed to the stone-using immigrants.

The study of food restrictions and of the animals which possess soul-substance leads Mr. Perry close to the subject of totemism, but in the absence of data concerning social organisation in Indonesia he is not able to deal with this topic, so obviously raised by this part of his study. Finally, Mr. Perry shows the presence of gold-workings and pearl-fisheries in those localities where the influence of the stone-using people is especially evident. In accordance with the views he has advanced elsewhere, these sources of wealth are held to have formed the inducements which led the stone-using people to settle in Indonesia.

The book must be regarded as a first instalment of a far-reaching research. The subjects dealt with have been determined largely by the principle of organic connection, and many other topics remain to be considered. Prominent among these is the disposal of the dead, on which subject the material is so extensive that Mr. Perry promises to devote to it a special volume. Social organisation is left almost wholly on one side, owing to the fact that this important subject has been neglected by the ethnographers to whom we owe our knowledge of Indonesia.

The sketch of the argument which I have given shows that the book before us forms a definite contribution to ethnological method. Many important methodological problems are dealt with incidentally. One such problem is suggested by Mr. Perry's treatment of tradition. We are now coming to see the highly complex character of the so-called "mythology" of savage and barbarous peoples. It is becoming apparent that the tales told by them form a mass of material out of which by a process of differentiation have been developed the literature, science, and history of civilised peoples. Mr. Perry has boldly recognised the value of native traditions as historical records, and the agreement which he shows between tradition

and evidence reached in other ways makes an important contribution towards the demonstration of the historical value of folk-tales.

Another most important problem which continually confronts those who are studying the diffusion of human culture is presented by the distinction between what I have elsewhere* spoken of as primary and secondary migrations. An element of culture directly introduced into a region by an immigrant people will differ in its nature from one which has been later carried to some other part of the region by a secondary movement. Mr. Perry explains several anomalies of distribution in Indonesia in this way, and thus helps us to understand the mechanism by which human culture is modified when introduced into a new home.

It is because difficulties and discrepancies have not been ignored, but have been boldly faced, and their solution attempted, that the argument is sometimes not easy to follow, and the book not altogether easy to read. In the older sciences many of the greatest advances have been made through the study of eccentricities and residues, and the same will undoubtedly be true of ethnology. This science is fortunate that at this early stage in its history an anomaly in the distribution of megalithic monuments should have been studied so thoroughly and patiently as in the book before us.

W. H. R. RIVERS.

Africa, West: Linguistics.

Rattray.

An Elementary Mòle Grammar, with a Vocabulary of over 1,000 Words. 95
For the use of Officials in the Northern Territories of the Gold Coast.

Compiled by R. S. Rattray, M.B.E. Oxford, at the Clarendon Press. 1918. 85 pp.

Mòle is the language which has hitherto been known, from the name of the people who speak it, as Moshi. These are the enterprising traders who dwell in French territory north of the Gold Coast Colony, and bring down every year a large number of cattle into the Northern Territory. Many of the same people are also settling and finding work in the British Possession.

The language is a typical member of one of those detached Negro groups which have commonly been called Semi-Bantu, and by Westermann the Sudanic Class Languages. The noun classification (with singular and plural) is, however, carried out in Mòle by suffixes. The noun changes its form considerably when used with an adjective, but there is no likeness to the elaborate system of concords found in the Bantu languages. The verb is conjugated for tense by suffixes, and for person and number by abbreviated pronouns. Mr. Rattray's work consists of a good grammar with notes on idioms and syntax, and a useful Mòle-English Vocabulary. A future edition might be improved by the inclusion of more examples of phraseology, some short texts, and an English-Mòle index. As it is, however, the book is essentially a very practical one, and will enable those who come into contact with this interesting people to understand them better and to be better understood by them. The volume is well printed and usefully interleaved.

S. H. RAY.

India: Folklore.

Mackenzie.

Indian Fairy Stories. By Donald A. Mackenzie. London: Blackie & Son, 96
Ltd. 1915.

Mr. Mackenzie has brought together in this volume a collection of twenty-three tales, described as Indian Fairy Tales. The description is to a certain extent justified, for most of the stories are undoubtedly based on Indian origins, but it would be a mistake to regard them as genuine Indian folklore. They are not renderings of actual Indian stories, but have been transmuted by passing through a European crucible into metal of an entirely different kind. There is not a particle of informa-

* *History of Melanesian History*, Vol. II, p. 308.

tion as to what part of India they are drawn from, if of popular origin, nor as to what their literary sources are, if they are of literary origin. We are told in the preface indeed that two of them, short fables (which occupy but five pages of the volume), are derived from the *Mahābhārata*, but this is the only information vouchsafed us. As to the intrusion of European ideas it may be sufficient to allude to the story of "The Vain Camel." This camel is described as an eater of thistles and as grazing in deep forests. Now camels do not eat thistles, for there are no thistles in their grazing grounds, nor do they graze in deep forests but in open jungles. No description of a camel told by a narrator familiar with these beasts could be guilty of such a blunder. As to some of the stories it is hard to accept them as Indian even in origin. Such are the "Story of the Ocean Queen," and the "Story of the Star Maidens," which do not suggest any Indian source, and seem quite foreign both in idea and expression to the whole spirit of the Indian folktale.

If the book is intended simply for popular consumption it may be admitted that it is a collection of pretty stories. It is also adorned with some good illustrations in black and white and an excellent coloured frontispiece, which has more of the Oriental spirit than the tales themselves.

M. LONGWORTH DAMES.

University of Pennsylvania.

The Museum Journal. Vol. IX, No. 1. March, 1918. Philadelphia.

The directorate of the University Museum at Philadelphia has done and is doing many things of importance and interest both for ethnology and archæology, in addition to the gradual extension of the fine museum building and its exhibits, all defrayed by the generosity of private patrons. The mere list of publications on the cover of *The Museum Journal* is a remarkable record; in the Babylonian section, twenty-two volumes of texts, Sumerian and cuneiform, eight volumes of the results from the Eekley B. Coxe expeditions to Nubia, three volumes of Cretan excavations, Dr. Max Uhle's valuable report on Pachacamac (Peru), and other lesser works.

For some years past, the Amazon expeditions, headed by Dr. W. C. Farabee, have absorbed the principal energies of the museum, whilst important excavations have been conducted in the palace of Meren Ptah at Memphis, and an expedition has recently gone to the mountain region of Venezuela. Dr. Farabee's report on his expeditions is unfortunately delayed as he is now employed on Government war service, but the *Journal* contains a short account by him on the Decorative Arts of the Amazon with many photographs of baskets, beaded aprons, and three ceremonial clubs from the Waiwai, Wapisiana and Apalaii, which suggest a connection with the South Seas. Owing to the very simple form of existence of the modern natives there is little opportunity for the development of art, but the capacity is there and was exemplified by a Waiwai who saw Dr. Farabee sketching, was given a sketchbook and pencil, and produced in a few hours drawings of a number of animals, &c., known to him (Fig. 27). These, Dr. Farabee remarks, suggest that he drew the objects rather from memory of their appearance as basketry designs than from sight. But other men recognised them, in spite of their artificial aspect. Dr. Farabee came in contact with several parties of the natives who had never before seen a white man, especially in the southern portion of British Guiana. It is to be hoped that a connected account of his journeys and finds may soon be available, especially with regard to the colossal funeral jars that he brought back, some of them large enough to contain two bodies seated side by side. There are also Conebo beer-jars of pottery, 4 feet high and about the same diameter, but resting on a very small base.

The unique North American Art of Quillwork, described by Mr. B. W. Merwin, is illustrated by fine specimens belonging to the Museum and showing the patient

industry of the Indian woman. In studying Mexican Indians the observer is constantly noticing that, to them nothing seems worth doing unless it costs them much time and trouble. So with the quill work; there was the getting of the quills, often by barter from tribes several hundred miles away; then the dyeing by boiling in some vegetable dye, sought in many places: "Tamarack bark, spruce cones, and several varieties of berries were used to produce red. Walnuts and wild grapes furnished blacks of different qualities. Wild sunflowers, the cornflower, pine bark, and willow root supplied the yellows. Blueberries and larkspur gave different shades of blue. The Indian woman had to be well versed in plant lore. Many methods of working were devised and complex foldings and stitches were employed to develop symbolic designs. The only implements used even in the most intricate work were an awl and sometimes a piece of bone to flatten the quills, also some sinew thread and usually some bark or leather patterns."

Four excellent photographs of totem poles near the Skeena river, B.C., accompany some legends (though not referring to them), obtained there by Dr. G. B. Gordon in 1917. Large detailed photographs are badly needed to give a true idea of the clever carving of some on these poles, and the humour of the less conventionalised figures.

Turning to a very different region, there are some beautiful drawings from ancient Central American sculptures, or from masterly photographs of them. The face of the seated king from the Hieroglyphic Stairway at Copan, looks out between the jaws of a huge serpent head with two twining bodies ending in rattles and the waving *quetzal* feather headdress towers behind. According to Dr. G. B. Gordon (who excavated the stairway), this was only one of several figures rather more than life-size and carved in very bold relief, seated in the centre, one above the other, and all painted originally in soft yet brilliant colours. Two other drawings are of details of the great stela with a king, his attendants, and a party of captives. These, and Figs. 4, 5, and 6, deserve careful study in order to understand the unfamiliar ornaments and emblems.

A coloured reproduction of a painted Maya vase from a mound in British Honduras, and an alabaster vase from the Uloa river are remarkable for the simplicity of form combined with elaborate ornament.

This whole number of the *Journal* illustrates the varied capacities of native American artists, working mainly by instinctive perception of what was pleasing to eyes trained by observation of Nature.

A. C. B.

ANTHROPOLOGICAL NOTE.

MR. MARSHALL H. SAVILLE has made three trips to Guatemala during the last two years, bringing back about four thousand archaeological specimens, with the locality of each authenticated. He visited a large obsidian quarry near Fiscal and secured photographs and a quantity of the quarry material, such as unfinished pieces and rejects. He studied the ruins near Lake Amatitlan and is endeavouring to establish definite culture areas in Guatemala, hoping to return later, the severe earthquake having prevented the intended stratigraphic work near the capital city. Mr. Saville found near Antigua a large nodule of polished chert with an inscription incised in double columns (and in the slanting style of glyphs in the Dresden codex), running down on each side of the sphere. He has also secured the most magnificent example of a pottery vessel ever found in ancient America. It is a large globular pot, sculptured, with Mayan motives, in the style of the "great turtle" at Quirigua. This is from the region between Zacapa and Guatemala city.

98



AGIBA SHRINE FROM A DUBU DAIMA, AT DOPIMA,
GOARIBARI ISLAND.

ORIGINAL ARTICLES.

With Plate M.

Gulf of Papua: Ethnography.

Haddon.

The Agiba Cult of the Kerewa Culture. By A. C. Haddon.

99

In the Gulf of Papua there may be distinguished four cultures, which, from east to west, may be termed the Elema, the Namau, the Urama, and the Kerewa; of these the three first are distinctly inter-related, but the last is more distinct. Without doubt these cultures have reached the coast from the interior of the island, though we are as yet ignorant of the routes they have traversed.

The term Kerewa is adopted from the village of that name at the northerly point of Goaribari Island, from which the other villages on this island, and certain others (Goro, Ubua, Ai-idia, Mombagoa, etc.) on the mainland and neighbouring islands, are stated to have been founded. The villages of Keme, Pai-la-a, and Aimaba, on the opposite mainland, appear to rank with Kerewa as original sites; as they have the same culture it is necessary to unite them under one designation, and provisionally I adopt the term "Kerewa" (*cf.* H. J. Ryan, * *Annual Report, Papua*, 1912-13, p. 76). The *agiba* may be taken as a criterion of this culture; the custom of employing these skull shrines extends also to the Kiko-Kairi tribes on Ututi creek (about seven miles above Kikori Station), to the region of the mouths of the Omati and Turāma rivers, and probably further inland. The language spoken on Goaribari and in the vicinity is known as *Kerewa wadi*, and is allied to that spoken by the Kiwai folk.



FIG. 1.—*Dubu daima*, Pai-la-a, Omati River; photograph by A. C. Haddon.

The Kerewa peoples live almost entirely on sago (*do*) and crabs (*ka-uri*), and the grubs that infest old sago palms. Owing to the swampy nature of the country they have but poor gardens, in which they grow bananas (*dubai*), sweet potatoes?, sugar-cane (*uri*), coconuts (*gota*), and a poor kind of native pumpkin, but no yams.

A village usually consists of a *dubu daima*, where the married men live; *ohiabai daima*, or young men's house; and the women's houses, *upi daima*. The *dubu daima* (Fig. 1) is a very long pile-dwelling varying from about 100 to over

* Since this was written I have heard, to my great regret, that my friend, Lieut. J. H. Ryan, was killed on July 17th, when leading his men in an attack in France.

200 yards in length.* The ridge is horizontal, or rises slightly at the front end and is supported by a central row of poles. There is a platform and entrance usually at each end, and several (usually five or six) side entrances. A gangway extends along the whole length of the interior, on each side of which are a number of cubicles, which are the sleeping places of the married men. I understand that the house is visited by women and girls only on the occasions of the *buguru* ceremony, which lasts for four days, and at which great sexual licence is permitted. This appears to be the ceremony described by H. J. Ryan, which, according to his account, is a simple kind of initiation rite culminating in marriage (*l.c.* pp. 76, 77).

In the *dubu daima* are a variable number of skull shrines (*agiba*).† An *agiba* consists of a flat oval board, the upper part of which is carved to represent a human face, and the lower part is perforated so as to leave two vertical hooks. The lower central portion of the board evidently represents a body, the lateral parts being the arms, and the upright hooks may represent the legs. It is painted black, red, and



FIG. 2.—*Agiba* in the *dubu daima* at Dopima; photograph by A. C. Haddon.



FIG. 3.—*Agiba*, "Aird River delta," from Seligman.

white. In front is a shelf (*pepe*), on which rest human skulls (*oro* or *opuoro*), probably of enemies or victims, these being attached by long loops to the hooks. The whole is lashed to poles which reach from the floor to the roof. I was informed at Aimaha that an *agiba* is carved by a man when he takes a head, but other men add skulls from time to time; the skulls are those of enemies only. One of the *agiba* in this *dubu daima* was brought from another village. Probably the *agiba* is a family shrine, and I suspect that the figure is the representation of an ancestor. I obtained a second *agiba* at Dopima (height 735 mm., breadth 365 mm.) which is very similar to that shown on Plate M. The one photographed *in situ* at Dopima (Fig. 2) had between fifty and sixty skulls attached to it. One at Pai-ia-a was

* I found that the one at Dopima was nearly 201·3 m. (660 feet) long, 10 m. (33 ft.) wide, and the floor was 1·98 m. (78 in.) above the ground. G. le Hunte estimated the length of a *dubu daima* on the right bank of the mouth of the Omati at 274·5 m. (900 ft.) (*Annual Report B.N.G.*, 1900-1, p. 28). The one described and figured by Jukes (p. 271) was over 300 yards in length (*see next page*).

† In the official reports this spelled *agibi*; in several cases I have ventured to differ from the official spelling of words.

1.07 m. (42 in.) high. I reproduce (Fig. 3) the *agiba* figured by C. G. Seligman (*Journ. Roy. Anthr. Inst.*, XXXIX., 1909, p. 259). I do not recall any other illustration of these objects, but they have several times been mentioned by missionaries and Government officials.

The skulls attached to an *agiba* may be plain or decorated in various ways (Plate M). C. G. Murray says: "As regards the skulls in the houses, those having artificial noses attached to them are of people who have died natural deaths; those that have no noses attached have been killed." (*Annual Report B.N.G.*, 1900-1, p. 33.) This requires verification. J. H. P. Murray states that their own dead are exposed on platforms until they are reduced to skeletons; the skulls are taken into the dwelling-houses, and the other bones are buried in a large mound (*Annual Report B.N.G.*, 1908, p. 12). I was informed that at Aimaha a widow puts the skull of her husband in her house. After a time a dance is held, and the skull is buried, but that the skulls of enemies are placed on the *agiba*.

One kind of decoration consists of having an artificial face made of clay and painted red; the nose is long and narrow and perforated at the tip, in the orifice of which a nose ornament may be inserted. The orbits are generally filled up with white clay, and shells or seeds may represent the eyes. The three specimens I obtained are shown in Plate M. Five Goaribari skulls in the museum of the University of Aberdeen are similarly decorated (R. H. Spittal, *Proc. Anat. Anthr. Soc. Univ. Aberdeen*, 1904-6 (1906), p. 88). I believe this special type is characteristic of the Kerewa culture, but skulls with artificial faces occur in Torres Straits, the Fly and Sëpik rivers.

Skulls are also found with a cylindrical projection from each orbit, often with a red *Mucuna* bean at the tip, and covered over (as is the face) with grey coix seeds. The earliest account of this decoration is by J. B. Jukes (*Voyage of H.M.S. Fly*, I, 1847, p. 274, and figure). He named the village where the skulls were looted "Pigville." It was almost certainly a Kerewa village. The skulls are in the museum of the Royal College of Surgeons (cf. J. Edge-Partington, *Ethnographical Album of the Pacific Islands*, II, 1895, Plate 196, Figs. 1, 2). Other ethnographical specimens collected on this occasion are in the British Museum. R. H. Spittal (*loc.*) describes three similar skulls from the Bamu River, and figures (Plates VI, VII) one fine specimen in the Aberdeen University Museum with very prominent eye-stalks and a perforated decorated oval board in the nasal aperture.

In the museum at Port Moresby there is a similar skull (*epita*) from the estuary of the Bamu. The eye-stalks are 82 mm. high; the nose-board is rather elaborate. Two essentially similar skulls with eye-stalks and nose-boards were figured (Plate facing p. 8) in the *Annual Report B.N.G.*, 1896-97, Brisbane, 1898, as coming from Neneba, on the eastern slopes of Mt. Scratchley. A. Giulianetti says (p. 68) that the people of this village (which is now derelict) place their dead in a box covered by a net, about 8 feet from the ground, and enclosed by a fence of about the same height, outside of which is a ring of large flat stones. When the skeleton is clean, the skull is removed and placed in a small house built specially for the purpose of storing the skulls of the tribe; but he does not say anything about skulls being decorated.

F. von Luschan describes and figures in M. Krieger's *Neu-Guinea* (Berlin, 1899, p. 507, Fig. 48), a skull of this type, but with spikes in the orbits, which are probably supports for a pith eye-stalk; presumably on account of the foregoing reference, he describes it as coming from Neneba, but evidently this is the same skull (No. 36) that is figured in W. D. Webster's *Illustrated Catalogue*, Vol. III, where it is stated to come from the Fly River. Doubting the allocation of these skulls to Neneba, I asked Governor J. H. P. Murray to institute special enquiries on this

point, which he kindly did. T. Millar (acting R.M.) replied to him: "The last lot of skulls I saw were at Semola in 1912, and they were not decorated. When at Neneba at the same time I did not see any skulls" (May 31, 1917). A blunder or wilful misrepresentation has evidently occurred, but by whom it is not now possible to discover. We are thus justified in stating that this method of decorating skulls extends from the Bamu to the Kerewa district. The same also applies to the nose-boards, which are called *kanega* at the mouth of the Fly, on the authority of J. Chalmers, who says: "When a head is carried home and cleaned, and all the smell quite gone, the *kanega* is stuck in the skull, which is hung up on a post "(*bio*) of the house" (MS.). Two of these specimens collected by him are figured by Edge-Partington (*Album*, II, Plate 197, Figs. 5, 6).

When a new *dubu daima* is built by any of the Kerewa peoples a man from another place is killed and brought to the new building and eaten in it. At Dopima, they said they did not sprinkle the blood on the posts of the house. It will be remembered that it was on an occasion of this kind that the famous missionary James Chalmers (Tamate) and his colleague O. F. Tomkins were killed and eaten at Dopima on the 7th of April 1901. (*Annual Report B.N.G.*, 1900-1901 (1902)). The *dubu daima* of the villages implicated in these murders were burnt and the war canoes destroyed. In a report on the massacre, the Rev. H. M. Dauncey says, "In one of the *dubus* were over seven hundred skulls, and at another four hundred. Some of the other *dubus* were cleared before the party reached them, but I am within the mark in saying that there must have been ten thousand skulls in the "twenty *dubus* burned." (Quoted from *The New Guinea Mission*, by G. Currie Martin, 1908, p. 78.)

I was informed at Dopima that when a new war canoe (*obi*) is made the warriors go in it to a strange village on the mainland and kill a man. They said the canoe is not sprinkled with his blood (but I doubt this), the body is eaten and the skull attached to an *agiba*. In Ubua, an off-shoot from Kerewa in the Kikori estuary, the beheaded corpse is held over the bow of the new canoe, so that the latter is covered with blood. At Dubu-muba, an off-shoot from Ubua on a neighbouring island, a new canoe is blooded. The eyes, nose, ears, intestines, and genitals are not eaten, the body, after having been scorched "all same pig," is cut into small pieces which are mixed with "New Guinea cabbage" (the *ombi* of the Northern Division) and a little sago, which is boiled in a bamboo over a fire, or, according to another informant, mixed with sago and wrapped in nipa palm leaves and roasted over a fire, there being no earth oven in this district. In all cases the body of the victim was eaten and the skull kept in the *dubu daima*. The Kerewa folk were in the habit of raiding the bush tribes of the Omati and those of neighbouring rivers, but most raids appear to have been made right up to the hills on the Sirebi River, which flows from the east into the Kikori some thirty miles from its mouth. H. J. Ryan gives an instance of the murder of a local native by nine Ubua men who went up this river to make a new war canoe; after painting it with his blood they placed the body in the canoe and returned to their village (*i.e.*, p. 80).

I noticed in the *dubu daima* at Dopima and other Kerewa villages miniature *agiba*, called *marabu*, to which birds' heads were attached; they were without a shelf. E. W. P. Chinnery informs me that he has seen outside a door in an Ututi village a similar object, to which were attached birds' skulls, bones of cassowaries, and lizards' skeletons. They were more or less similar to three specimens (Fig. 4) which I collected at Wododo, a village on the north of Dibiri island, in the estuary of the Bamu, where they are called *gope*. I do not know their significance, but it is suggestive that, though the human-skull shrines have not been definitely recorded beyond the area noted above, the bird-skull shrines extend to the estuary

of the Fly, or at all events to that of the Bamu. There is another *gope* from "Deberi," of the same type as the foregoing, in the Cambridge Museum; length 415 mm., breadth 130 mm. Given to the same museum by G. Landtman is a specimen he collected at Kiwai island in 1910. It consists of an oval board, concavo-convex from side to side, 685 mm. long and 223 mm. broad; there is a carved face above, and in the centre are two oval apertures, with a vertical hook in each; the board is uncoloured except that the deep intaglio parts of the carving are coloured white. It evidently falls in with this series, but the head is not disengaged.

I also obtained at Wododo a well-carved *gope*, which consists of a face with two elongated perforations below the mouth, which converge to the median line inferiorly; the body is without recognisable arms, and its lower part is broken, but it evidently was curved upwards to form two hooks; height 410 mm., breadth 165 mm. I doubt if it is large enough to support human skulls. A somewhat similar object, described as a "Holder for three human skulls, made of wood, carved, and decorated in red, black, and white; native name *goapey*, Dameiacara, "mouth of Fly River," is figured in Webster's *Illustrated Catalogue*, III, No. 18. It has no arms but has a vertical hook on each side and a central one in an orifice; no dimensions are given. Dameiacara may be the village called Damerakoromo in the official map, which lies opposite Dibiri, in the Bamu estuary. J. Edge-Partington (*Album*, III, 1898, Plate 72) gives an example of each of these two types, which he describes as "Flat wooden objects (*goapen*) for holding the skulls of fish, turtle, and birds, coloured red and black. Mouth of "Fly River." The one with two hooks is 20½ in. (521 mm.) high, and the one with three hooks 32 in. (1,067 mm.) high.

All these specimens are certainly connected with a skull-cult of some sort.

Carved and painted boards, *kaiamuru*, are erected in the *dubu daima*, usually close by the entrance to a cubicle; they are doubtless connected with an ancestor cult. Of these I collected three specimens at Pai-ia-a,



FIG. 4.—Bird-skull shrines, *gope*, Wododo, Dibiri island, estuary of the Bamu. (A) Black, the intaglio shows light wood; length 450 mm., breadth 155 mm.; with two imitation bamboo knives, the jaw of a young pig (*Sus papuensis*), and skulls of *kaura* (the small Eastern curlew, *Numenius minutus*, a winter resident from the north), and skulls of other small birds. (B) Black, red, and white; length 530 mm., breadth 205 mm.; with skulls of the *dobudobu* (Papuan frogmouth or "morepork," *Podargus papuensis*), *dubukoko* (Papuan crow, *Cracticus personatus*), *oripiko* (horned friar-bird, *Philemon* sp.), and several kinds of Meliphagine birds. (C) Blackened all over; length 410 mm., breadth 120 mm.; with two imitation bamboo knives, and skulls of the great black cockatoo (*Microglossus aterrinus*) and a kingfisher (*Tanysiptera* sp.), &c.—Museum of Arch. and Eth., Cambridge, collected by A. C. Haddon, 1914.

Omati River (Fig. 5). In the same house I obtained a wooden effigy of a man and of a woman, which were made by a man to represent the dead parents of the youth to whom they were given (Figs. 6 A, B), and also a carved stick of heavy



FIG. 5.—*Kaiaimuru* from a *dabus daima* at Pai-la-a, Omati River. All are painted black, red, and white. (A) Slightly concavo-convex from side to side, length 1.113 m., breadth 280 mm. (B) Concavo-convex from side to side, length, 1.555 m., breadth 250 mm. (C) Flat, length 1.240 m., breadth 123 mm.—Museum of Arch. and Eth., Cambridge, collected by A. C. Haddon, 1914.



FIG. 6.—(A) Effigy of a deceased father, roughly carved out of heavy wood, carved portion painted black, red, and white, with a shell eye; 1.010 m. high. (B) Effigy of a deceased mother, uncoloured, with characteristic woman's dress; 1.300 m. high. (C) Magical stick (*abioabio*) carved out of heavy wood, carved portion originally coloured red and white; length 76 cm.

wood, *abioabio*, (*abio* = malevolent magic). This magical stick (Fig. 6 C) is supposed to make a canoe invisible when the crew go on a head-hunting expedition; the owner paints himself with red and white pigment and rubs a leaf and the kernel of a young coconut on his face.

There are other interesting features about the Kerewa culture which I cannot deal with here. Allusion may, however, be made to the occurrence of basketwork masks (*avoto*) similar to those of the Sëpik River (cf. J. H. P. Murray, *Papua*, 1912, p. 189, Plates pp. 187, 204; O. Reche, *Der Kaiserin - Augusta - Fluss*, Hamburg, 1913, p. 409 ff., Plates LXXVIII-LXXXIII and Fig. 427; Frobenius, *Int. Arch. f. Ethnogr.* XI, 1898, Plate IV, Fig. 26; F. von Luschan, *Bäsk. Arch.*, 1911, Figs. 28, 29). I believe that similar masks occur also in the region of the Bamu.

Skulls with painted clay faces and otherwise decorated occur higher up the Sëpik. In the "Middle river" district, or "Culture III" (*i.e.*, Plates LXVI-LXIX), one has a long cylindrical piece of wood as a nose, which is perforated at the base to represent nostrils. Many skulls from near the mouth of the river, "Culture I," have elaborate carvings on the frontals; also here are to be found human skulls attached as heads to wooden effigies (pp. 357, 374, Figs. 399, 400), analogous to one I obtained at Ukiaravi, Purari delta.

From various parts of the Sëpik come wooden double hooks with a human face carved on the shank, analogous to the *gope* I obtained at Wododo.

On the other hand, there are many characteristics of the cultures along the Sëpik which have not as yet been noted in British New Guinea, but there cannot be any doubt that the essential elements of these cultures have penetrated to the Gulf of Papua by various cultural streams. It also seems to be established, from the evidence given above and from further data known to me, that there is an intimate relation between the culture of the Bamu estuary and that of the Kerewa district, the significance of which is not yet quite clear.

I have to thank the Trustees of the Percy Sladen Memorial Fund for enabling me to visit the Gulf of Papua, for without their aid I should not have been able to study this region.

A. C. HADDON.

DESCRIPTION OF PLATE M.

AGIBA SHRINE, FROM A *dubu daima* AT DOPIMA, GOARIBARI ISLAND.

Height of board 850 cm., breadth 365 cm. Painted red and white, with a wooden imitation of a crescentic pearl-shell chest ornament.

On the shelf is a plaited palm leaf mat; the skulls resting on it, from left to right, are:—

- (a) Juv., deformed; Aïmaha.
- (b) Male, adult, artificial red face with long nose perforated at its end, eyes white, a black band from malar round eyes and down the sides of the nose to its tip. A-shaped incisions with cross hatchings on temporal regions; Dopima.
- (c) Male, adult, with cylindrical projection in right orbit (the left one is missing), which, with the face, is coated with coix seeds; Aïmaha.
- (d) Male, adult, long ratan nose with recurved tip, eye sockets filled up, incised transverse band with chevrons on frontal; Dopima.
- (e) Juv., similar to b, but with cowries in orbits and a boar's tusk in nasal perforation, obscure transverse incisions on frontal; Dopima.
- (f) Nearly adult, face as in b, piece of cane in nasal perforation, coix seeds in orbit, a sago fibre fringe on each zygoma, an incised band of chevrons on each temporal line; Pai-ia-a.
- (g) Juv., orbits filled up, perforated slab of wood in the nasal aperture; Dopima.

It will be noted that only b, d, e, f, g actually belonged to this shrine, but one is justified in placing the others on it as they belong to the same culture, and on any shrine skulls may be quite plain or decorated as above. All have the typical long loop attached to the maxillæ; at Pai-ia-a this was called *ito iei* (plaited 'lawyer vine').—Cambridge Museum of Arch. and Eth., collected by A. C. Haddon, 1914.

Nigerian Notes.

Thomas.

(II) **Metal Work.** By N. W. Thomas.

100

Though other metals, such as copper and lead, may be used for bracelets, the only two which are of real industrial importance among the Edo are iron and brass; the use of the former of these two is again not unnaturally far more extensive than that of the other, and it is rare to find a village of any size without one or even two smithies, which serve as a meeting place in the hot hours of the early afternoon. Work in the smithy is carried on at irregular intervals, and the blacksmith is seldom or never wholly dependent on his craft for a living.

The case of the brass workers is somewhat different; they are, comparatively speaking, an organised body in Edo, with a chief at their head; they live in one street for the most part, and if they now turn to other work to eke out a livelihood it seems likely that it is a late development due to the alteration of conditions.

(a) IRON.

In the case of a blacksmith in the village the craft may well be hereditary, though I never found a son at work with his father. In Edo a boy is sent to learn the work at an early age—seven or soon after; a fee is paid by the father—said to be 5*l.*—and a sacrifice is offered to Ogun, the deity of blacksmiths.

The tools of blacksmiths and brass-smiths are to some extent identical, but for the latter the file is more useful than the hammer. The blacksmith makes his own tools: a hammer (*umomo*), sometimes conical, sometimes square; a firehook (*ukwere*), an anvil, consisting of a stout iron pin with a circular top; a file and a chisel. The bellows (*ekwe*) are of goatskin, two bags with wooden handles tied in the centre, the air being expelled through two conical pottery tubes (*obwe*) fixed in the block of wood, on the top of which are the aperture for the skins. The bellows are fixed in the ground, and the nozzles are hidden in the ashes. Sometimes a boy acts as blower, sometimes the bringer of an article to be repaired undertakes the job.

The main work to be done is the repair of matchets for field work, of hoes, and of minor articles such as chains, toy bows and arrows, and other objects used in the cults. Some of these latter are usually to be found in the market. Tools are also made for leather workers, carpenters, and others; and hand or stand lamps (*orukpa*) may be made when there is a purchaser. These lamps are flat bowls, the stand lamps with a long stem for planting in the ground, the hand lamps with a double bow and chain over the bowl; in each case there is a spoon for the oil and a "tortoise" to be placed on the cotton wick to prevent the flame from spreading too far.

Other articles of manufacture are hinges (*olodu*), door keys (*isahe*), women's hairpins and knives, men's knives, and Osun, an account of which is given in another section.

For the working of iron the *azemomo* tree is cut while it is green, and the logs piled up without being dried and fired at once; the charcoal (*enu*) is brought home. To light the fire a brand is taken from the house and carried to the smithy with the aid of pincers.

In parts of Northern Nigeria, such as Uyame, in the north-east of the Central Province, iron is also smelted from ore. I witnessed the operation only once—at Megeri—and ignorance of the language prevented me from ascertaining details. The conical furnace was of clay beneath a hut, about 4 feet high, with a hole sunk in the centre. So far as I could ascertain, ore and wood are put in alternate layers, and the bellows worked until the metal flows into the hole beneath the cone. The pigs are probably small; iron is chipped off them for use with a hammer or chisel.

The bellows consisted of a piece of skin, three or four feet square, which was simply pulled in and out by a man.

(b) BRASS.

The brass workers say that they are descended from the Kings of Ufe, one of whom married the daughter of a brass worker. She bore seven sons, and all but the youngest became kings; the youngest son reflected that his mother was the daughter of a brass worker and became himself a blacksmith. From Ufe he was sent to Edo to greet the king, and remained there to found the colony of brass workers.

A boy is apprenticed at an early age; or, if he comes from the family of the chief, he comes as a learner and receives a wife when he is marriageable.

At an early age a boy learns to make moulds for the small hawk bells that are worn by children, and occasionally figure on the ceremonial dress of a priest. A clay or mud core is prepared by one boy; another takes bees-wax, probably mixed with oil to soften it, and rolls it out in long strings with a cam-wood roller and board; when the string is finished it is laid in some cross wires; then the other boy takes it and winds it round the clay core in the pattern to be produced, with a final curl to represent the handle. When a sufficient number of these moulds are prepared, they are set in a large pot, arranged as it were like grapes on a bunch, the stalks being the lines along which the molten metal is to run. This mould ready, it is heated in the fire and the wax run out; it is then ready for the casting.

At present brass seems to be obtained from European sources; formerly it was got from the king, and was naturally of a different quality. It is broken up and put in a clay or sand crucible over the fire, or, rather, imbedded in the fire, which is blown up with the bellows. When the brass is in a liquid state it is poured into the mould, which is then immersed in water and broken to extract the bells; the excrescences are filed off, and after being rubbed with sand the bells are ready for sale.

At the present day there is not a large sale for genuine native work of the old type. A certain number of bracelets are, no doubt, made; occasionally a brass-hilted knife may be manufactured; and an *uhumexwe*, or face-mask, formerly worn by chiefs on the left side when they went to visit the king, can still be turned out in creditable style.

The majority, however, of the modern articles are of inferior metal, badly modelled, and altogether different from the old style. They are made for sale to Europeans, and depict recent events or scenes of every-day life; occasionally armlets are turned out for the same purpose. In old days, however, many more articles were required; dishes (of wood) for the king's use were ornamented with brass; bells, lamps, and ceremonial objects of all sorts must have been needed; and possibly a certain amount may have been exported.

Objects figured in *Antiquities from Benin City* are seldom recognised by modern brass-smiths as in any way resembling the work which they put out; *uhumexwe*, *asan*, and a few other objects complete the list. The old brass ware does not seem to have wandered far from Edo; but occasionally I found in other parts of the country objects which from their style of workmanship might have been produced in Edo. Such, for example, was a leopard's head sold to me at Okpe.

There are but few old bronzes obtainable at the present day. I procured a fragment of a necklace, said to have been worn by Osuon, and a figurine, 23 cm. high, of a woman with Usen marks, holding what may be intended to represent a tension drum in her two hands. I also saw in Edo a broken lamp pedestal of bronze, hollow, with an earthy core; on the disks which stand out from the central staff are decorative heads.

Brass hair pins with broad ends decorated with incised lines or punched holes are common in the Ora country; they seem to be made by blacksmiths.

Beyond the making of the bells I had no opportunity of seeing castings made in Edo; but I saw a brass-smith at work with his hammer occasionally. He used a hammer in shape something like a tent peg, but the flat edge was used to strike the object with. In one case a piece of brass with a hook at each end was straightened and then made four square with rapid blows on each side, the bar being turned 90° each time. I was struck with the accuracy of the work.

N. W. THOMAS.

Geology.

Greenhithe Shell-bed. By Reginald A. Smith, F.S.A.

Smith.

101

An examination of the Stopes collection, in course of arrangement for the National Museum of Wales, has revealed some additional evidence as to the date of the shell-bed at Ingress Vale, Greenhithe, Kent, the material from which is now scattered in several collections. Unfortunately, the comparatively large series now at Cardiff is not accompanied by any stratigraphical record, but the site was evidently occupied as late as Le Moustier times, though the fauna of the main deposit has been referred to the Pliocene (witness the *Trogontherium* and *Neritina grateloupiana*). The excavation undertaken in 1913 on behalf of the British Museum and the Geological Survey (see *Archæologia*, LXV, 192) yielded no less than 500 flakes, but no implements of any kind, which was disappointing, in view of the many fine specimens of St. Acheul type obtained previously by several collectors.

The critical point was, and is, the relation of these ovates to the seam of Pliocene shells, and it will perhaps never be decided, as very little remains of the deposit; but the late Mr. Stopes collected enough to establish a sequence, even though the occurrence of several types on the same site may revive the contention that all types occur together at all periods.

Apart from broken material and mere flakes (some of which closely resemble the series in the British Museum), the following were the principal items:—

5 specimens chipped in eolithic style, one apparently a true eolith.

2 rolled hand-axes, one triangular and ochreous, the other with squared point and notch below it.

1 rolled ochreous hand-axe, triangular, with cutting-edge below, and a paler specimen with reversed S-twist on one side.

1 heavy hand-axe, mottled brown and yellow, much rolled, scratched, and glossy.

11 broken implements of various types, two of them rolled.

2 twisted implements, both with reversed S-curve.

19 small, unrolled, pear-shaped hand-axes of the type commonly found in the Barnfield pit opposite.

37 other implements of various ordinary types, six with white or creamy patina.

15 ovates, most with basil point (*en biseau*), including one deeply ochreous, but little rolled.

4 cordates, one regular and another heavily rolled.

1 cordate implement with one face flaked quite flat, the other apparently unfinished.

9 good round-headed and 16 square-headed scrapers, mostly made from medium-sized flakes.

14 flakes used as hollow-scrapers.

22 square-nosed flakes, most with terminal, and a few with lateral, nose and

7 special cases with nose curved to the left and a notch below it.

31 flakes of all shapes, with "spurs" of different widths at end or side.

- 16 good and 27 inferior side-scrappers (*racloirs*) of Le Moustier type, some forming rough "points."
 1 rough segmental tool ("tea-cosy" type), with broad, flat base and zig-zag cutting-edge.
 2 struck "tortoise-cores," inferior quality.
 5 flake-implements of Northfleet (Levallois) type, the best and largest one with lateral bulb; two consist of the butt-end only.
 5 flakes with facettled butts, but not obviously struck from "tortoise-cores."
 1 Aurignac point with lateral notch (*encoche*), perhaps from the surface.

Collectors assert that ovate implements were found among the shells, and it certainly looks as if many of the earlier types, which might be considered nearer in date to the shells, are derived, the specimens obviously *in situ* being of St. Acheul and Le Moustier character. This evidence from the Stopes collection is supported by specimens in the cabinets of Mr. W. M. Newton and Mr. A. E. Relph (to name only those), and there is room for some ingenious theory to reconcile the flints and the fauna discovered at this extraordinary spot on the 100-ft. terrace of the Thames.

This sequence was, to some extent, foreshadowed by Mr. W. M. Newton in MAN, 1901, 66, and the following notices of the shell-bed are given in chronological order: *Journ. Roy. Anthr. Inst.*, XXIX (N.S. II), 302 (first account, in 1900); *Proc. Geol. Assoc.*, XVII, 238; *Report Brit. Assoc.*, Southport meeting, 1903, 803; *Proc. Geol. Assoc.*, XXI, 492; *Archæologia*, LXV, 190; and *Proc. Prehist. Soc. East Anglia*, II, 253.

REGINALD A. SMITH.

Crossing the Line.

The Famous Baptism of the Tropic. By Lt.-Col. H. A. Rose.

Rose.

102

Fréminville (Chevalier de, 1787-1848), a capitaine des frégates du Roi,* thus describes this *carnaval*, as he calls it:—

On the afternoon of the day preceding the ship's entry into the tropic a hail of dry peas and cartridge-cases fell from the tops on to the forecastle. These announced the *courrier* of the "Bonhomme" or "King of the Tropic." This *courrier*, cracking his whip, descended from the main-top. He was a top-man, very handsomely dressed as a postilion, with a striped waistcoat, badge, buckskins, boots and spurs according to regulation, not forgetting his big queue or *catogan*, which symbolises the headgear of the true *braves enfants de la Poste*. Advancing towards the commandant, he handed him a letter from his sovereign, which demanded the customary tribute from those who entered his realms for the first time.

On the next day (or next but one) the ship entered the Tropic of Cancer. From morning preparations for the *fête* had been made. A tent had been pitched at the foot of the main-mast; underneath it was an altar surmounted by a cross, and all the attributes of navigation—maps, compass, etc.; to its right the throne of Father Tropic; to its left a tall vat, filled with water, across which was placed a plank. A clap of thunder and a shower like that of the day before announced the king's arrival.

He descended from the main-top. He had a white beard of tow, and though covered with furs, pretended to shiver, in spite of the heat. After him came down his court, consisting of half the crew. The disguises were quite ingenious. A beardless youth represented Amphitrite, wife of the "Old Tropic." Cabin-boys, as Tritons, furnished her train. Behind this group came Neptune, drawn on a gun-carriage, trident in hand. Then came slaves of the Tropic smeared with various colours. Here a group of warriors dressed as Orientals, thanks to the loan of all the

* Bibliothèque de la Révolution et de l'Empire, VII., *Mémoires du Chevalier de Fréminville*: Paris, 1913, E. Champion, pp. 30-33. What follows is a condensed translation.

flags on board ; there the *gendarmes* and almoner of Father Tropic—Breton peasants with a dancing-bear ; and, to close the train, the devil with his horns and fork. Having defiled on the deck and round the tent, the Bonhomme went inside it, and his train ranged itself round him. His secretary called all those who were to receive the baptism. Two ladies were first baptised—with some drops of water on their fair hands. Then came the men, who were made to swear to respect, in all circumstances, the wives of good sailors. Each was then placed on the fateful plank, and a page of Father Tropic presented him with a basin. If he dropped an offering into it he got a few drops of water on his sleeve ; if not, he was brusquely seized by the waistband of his trousers and cast into the vat, to the intense joy of the onlookers. The soldiers, too numerous for individual baptism, were drenched by the hose *en masse*. The rite concluded with songs and dances on the fore-deck, rank and age being soon overlooked on the poop. People threw water at one another and played a thousand tricks. The Tropic's health was finally drunk in punch.

De Fréminville ascribes the origin of this ancient rite to the Portuguese and Spanish navigators who ventured at the end of the fifteenth century upon the boundless Atlantic. He also says it was allowed on State ships in order to maintain cheerfulness, one of the elements of health.

This account differs a good deal from that given in the Book of Days, in which no mention is made of the "Old Tropic." As practised by English sailors, shaving the novice was a principal feature, and by far the roughest part of the ordeal. The Book of Days says the custom, in some form or other, is believed to be very ancient, and to have been originally instituted on the occasion of ships passing out of the Mediterranean into the Atlantic, beyond the "Pillars of Hercules." Could anyone give references to classical Portuguese or Spanish authorities on the origin and history of the rite ?

H. A. ROSE.

Europe : Witchcraft.

Murray.

Witches' Transformations into Animals. By M. A. Murray.

103

The belief that human beings can change themselves, or be changed, into animals carries with it the corollary that wounds received by a person when in the semblance of an animal will remain on the body after the return to the human shape. This belief seems to be connected with the worship of animal-gods or sacred animals, the worshipper being changed into an animal by being invested with the skin of the creature, by the utterance of magical words, the making of magical gestures, the wearing of a magical object, or the performance of magical ceremonies. The witches of the sixteenth and seventeenth centuries appear to have carried on the tradition of the pre-Christian cults, and the stories of their transformations, when viewed in the light of the ancient examples, are capable of the same explanation. Much confusion, however, has been caused by the religious and so-called scientific explanations of the contemporary commentators as well as by the unfortunate belief of modern writers in the capacity of women for hysteria. At both periods pseudo-science has prevented the unbiassed examination of the material.

There are no records extant of the animals held sacred by the early inhabitants of Great Britain, but it is remarkable that the range of the witches' transformations was very limited ; cats and hares were the usual animals, occasionally, but rarely, dogs, mice, crows, rooks, and bees. In France, where the solemn sacrifice of a goat at the Sabbath points to that animal being sacred, it is not surprising to find men and women witches appearing as goats and sheep. Unless there were some definite meaning underlying the change of shape, there would be no reason to prevent the witches from transforming themselves into animals of any species. It

would seem, then, that the witches, like the adorers of animal gods in earlier times, attempted to become one with their god or sacred animal by taking on his form; the change being induced by the same means and being as real to the witch as to Sigmund the Volsung* or the worshipper of Lycean Zeus.†

In the earlier cults the worshipper on becoming an animal changed his outward shape only to the eyes of faith, though his actions and probably his voice proclaimed the transformation. The nearest approach to an outward change was by covering the body with the skin of the animal, or by wearing a part of the skin or a mask.

The Aberdeen witches (1597) are a good example of the change which was not visible outwardly. In all the cases, the accused are stated to have "come to" the Fish Cross of this burgh, under the conduct of Sathan, present then with you, "playing on his form of instrument, ye all danced about the Fish Cross and about the Meal-market a long space." There is no suggestion of any change of form except in the case of Bessie Thom, who was tried at the same time and for exactly the same offence as her comrades: "There, accompanied with thy devilish companions and faction, transformed in other likeness, some in hares, some in cats, and some in other similitudes, ye all danced about the Fish Cross."‡ The evidence of Marie Lamont (1662) suggests the same idea of a ritual, though not an actual, change; she confessed that "shee, Kettie Scot, and Margrat Holm, cam to Allan Orr's house in the likenesse of kats, and followed his wif into the chalmers"; on another occasion "the devil turned them in likeness of kats, by shaking his hands above their heads."§ In Northumberland (1673) the same fact appears to underlie the evidence; Ann Armstrong declared that at a witch meeting "the said Ann [Baite] hath been severall times in the shape of a catt and a hare, and in the shape of a greyhound and a bee, letting the devill see how many shapes she could turn herself into. They [the witches] stood all upon a bare spott of ground, and, bad this informer sing whiles they danced in severall shapes, first of a hare, then in their owne, and then in a catt, sometimes in a mouse, and in severall other shapes. Shee see all the said persons beforementioned dancing, some in the likenesse of hares, some in the likenesse of catts, others in the likenesse of bees, and some in their owne likenesse."||

The method of making the ritual change by means of magical words is very clearly recorded in the Auldearne trials, where Isobel Gowdie, whose evidence was purely voluntary, gives the actual words both for the change into an animal and for the reversion into human form.

To become a hare:

"I sall goe intill a haire,
With sorrow and sych and meikle care,
And I sall goe in the Divellis nam,
Ay quhill I com hom againe."

To become a cat or a crow the same verse was used with an alteration of the second line so as to force a rhyme; instead of "meikle care," the words were "a

* *Volsunga Saga*, Books I, II; Wm. Morris: *Collected Works*, XII, pp. 32, 77.

† *Pausanias*, VIII, 2, 3, 6, ed. Frazer. Cp. also the animal names applied to priests and priestesses, e.g., the King-bees at Ephesus; the Bee-priestesses of Demeter, of Delphi, of Proserpine, and of the Great Mother; the Doves of Dodona; the Bears in the sacred dance of Artemis; the Bears at the feast of Poseidon at Ephesus; the Wolves at the Lupercalia, &c.

‡ *Spalding Club Miscellany*, I, pp. 97-8, 114-15, 165; *Bessie Thom*, p. 167. Spelling as used.

§ Sharpe: *Historical Account*, pp. 133, 134.

|| "Deposit from York Castle." *Denham Tracts*, II, pp. 299, 301, 304.

black shot" for a cat, and "a black thraw" for a crow or crow. To revert again to the human form the words were:

"Hare, hare, God send thee care,
I am in an hare's likeness just now,
But I shall be in a woman's likeness even now,"

with the same variation of "a black shot" or "a black thraw" for a cat or a crow. The Auldearne witches were also able to turn one another into animals: "If we, in the shape of an cat, an crow, an hare, or any other likeness, &c., go to any of our neighbours houses, being Witches, we will say, I (or we) conjure thee Go with us (or me). And presently they become as we are, either cats, hares, crows, &c., and go with us whither we would.—When one of us or more are in the shape of cats, and meet with any others our neighbours, we will say, Devil speed thee, Go thou with me. And immediately they will turn in the shape of a cat, and go with us."* The very simplicity of the method shows that the transformation was ritual; the witch announced to her fellow that she herself was an animal, a fact which the second witch would not have known otherwise. The second witch at once became a similar animal and went with the first to perform the ritual acts which were to follow. The witches were, in their own estimation and in the belief of all their comrades, to whom they communicated the fact, actually animals, though to the uninitiated eye their natural forms remained unchanged.

The French witches wore the skin or a portion of an animal in the sacred dance. In Lorraine (1589) Bernhardt's Nicolæa stated that she had seen in an open field "mitten am hellen Tage, einen Tanz von Männern und Weibern, und weil dieselben auff eine besondere Weise und hinterrücks tanzten, kam es ihr frembd für Stunde derhalben still, und sahe mittallem Fleiss zu da ward sie gewahr, das etliche in dem Reyhen waren so Geiss und Kuhfuss hatten."†

In the Lyons district (1598) "il y a encor des Demons, qui assisteut à ces dances en forme de boues ou de moutons. Antoine Tornier dit que lors qu'elle dansoit, vn mouton noir la tenoit par la main avec ses pieds bien haireux, c'est à dire rudes & reuesches."‡

Ritual masking will also account for the transformation into animals. In Lorraine (1589) a man-witness stated that "indem wird er eine Höle, welche sie nennen die Morelianische Klippe, gewahr, darinnen sechs Weiber mit Larven umb ein Tisch mit guldenen und silbernen Geschieren herumb tanzten."§ Boguet also had evidence of the wearing of masks: "Ils se masquent pour le iourd'huy, selon Claude Paget, & avec elle plusieurs autres.—Ils se masquent encor aujourd'huy pour la plus part. Estienne Poicheux rapportoit que partie des femmes, qu'elle auoit veuës au Sabbat estoient voilées. Et pour cela les Lombards par leurs loix les appellent "Maschas."|| Barbe, the wife of Jean-Remy Colin de Moyement in Lorraine (1613) said that "elle a veu dancier les assistans en nombre de sept à huict personnes, parties desquelles elle ne cognoissoit ad cause des masques hideux."¶ The masking and disguising of the witch is probably the explanation of the evidence given by the boy-witch, Arnold von Holthaus, at Münster (1644): "Arnold wollte auf dem Tanzplatze Hasen, Katzen, Mäuse, Schweine, Wölffe, usw. verfertigt haben."**

There is also another method of transformation, which is the simplest. The witches themselves, like their contemporaries, believed that the actual animals, which they saw, were human beings in animal form. Jeannette de Belloc, aged twenty-four,

* Pitcairn: *Criminal Trials*, III, pp. 607, 608, 611. Spelling modernised.

† Remigius: *Demonolatria*, Pt. I, ch. xiv, p. 67.

‡ Boguet: *Discours des Sorciers*, p. 132.

§ Boguet, pp. 120, 133.

** Humborg: *Hexenprozesse*, p. 59.

¶ Remigius: Pt. I, p. 65.

¶ Fournier: *Epidémie de Sorcellerie*, p. 16.

in the Pays de Labourd (1609), described the Sabbath as "vne foire celebre de toutes sortes de choses, en laquelle aucuns se promenēt en leur propre forme, & d'autres sont transformez ne sçayt pourquoy en animaux. Ella n'a iamais veu aucune d'elles se trāsformer en beste en sa presence, mais seulement certaines bestes courir par le Sabbat."* Helen Guthrie, of Forfar (1661), states the case with even greater simplicity: "The last summer except one, shee did sie John Tailzeour somtymes in the shape of a todde, and somtymes in the shape of a swyn, and that the said John Tailzeour in these shapes went up and doune among William Millne, miller at Hetherstokes, his cornes for the destruction of the same, because the said William hade taken the mylne ouer his head; and that the diuell cam to her and pointed out John Tailzeour in the forsaid shapes unto her, and told her that that wes John Tailzeour."†

REVIEW.

Europe: Geography.

Fleure.

Human Geography in Western Europe. By H. J. Fleure. London: Williams and Norgate. 8vo., pp. vii and 263.

104

This book is a geographical study of, from the standpoint of the interaction of man and circumstance, an appreciation of the *genius loci* of the human groups of Western Europe. The author distinguishes three main zones in accordance with the response of the soil to human effort. The central core of the great European highlands to a large extent refuses sensible increment even to prolonged effort, and is, therefore, termed a Region of Difficulty. The southward slopes to the Mediterranean have a favouring climate yielding an early response and a steady moderate return to effort, allowing of a certain amount of leisure and opportunities for intercommunication. These are termed Regions of Increment; they have been characterised by a development of spirituality, and have contributed to the world flowerings of æsthetic appreciation and ideals of social conduct and practical life. The portions of the northern temperate forest bordering on grass lands needed much hard work before they were converted into farm and cornland. Effort was the dominant note, though the ultimate increment was often large. These areas are termed a Region or Zone of Effort. The more northern forests on the arctic fringe remain regions of difficulty. While civic ideals and art could develop in the zone of increment the regions of effort progressed more slowly. The war against the forest encouraged co-operation and the growth of village communities, with, however, the limitation of being self-centered and suspicious of the outer world; these regions thus being unsuited for the spread of idealisms. The regions of difficulty have continued from early times with the old activities of stock raising, lumbering, and hunting. They have always tended to export men. These regions of difficulty have been gradually invaded from the region of effort, the change being often accompanied by the spread of a broad-headed population, and the retreat of a long-headed population which has shown an attachment to an adventurous life. The greatest advances have come in regions of contact where there is considerable racial admixture.

Dr. Fleure traces these lines of contact in each of the main areas of the West, showing the results of contact with the older Mediterranean civilisation, whether across land routes or as a result of coastal traffic. He discusses the meaning of nationality at the present day as contrasted with the past, concluding that racial unity is, if possible, a disadvantage. The territorial principle, unity of religion, custom, and language all help, but there is no *sine quā non*, no absolute criterion of nation-

* De Lancre: *Tableau*, p. 129.

† Kinloch and Baxter: *Reliquiæ Antiquæ Scotiæ*, p. 123.

hood, but if a moderate-size group has a common language with a rich spiritual tradition, that group will always strive to keep its individuality. The volume is unfortunately scarcely large enough for the development of the arguments in detail, but contains much matter provocative of thought. F. C. S.

ANTHROPOLOGICAL NOTES.

Dr. Gann's Work in British Honduras.

In British Honduras Dr. T. Gann has been engaged in digging for the museum. One of the sites was of great interest as it contained material of Spanish origin, together with typical Mayan artifacts. The work is still being carried on, and Dr. Gann's collections from various places in the colony have been secured. Included were two large human heads in stucco and painted in colours, found in a recently discovered chamber in the sub-structure of the House of the Governor, Uxmal, Yucatan. They were parts of figures larger than life size, and were broken off by the vandals who found the chamber and brought to Belise. No further details could be ascertained, unfortunately. A. C. B.

Lectures to Soldiers.

The Institute has been asked to aid in obtaining volunteer lecturers in connection with the War Office scheme of education within the Army. The range of subjects is wide, and non-technical treatment is required. Travelling and other expenses will be paid by the War Office, and lecturers for the Continent as well as this country are needed. Fellows who are interested should communicate in the first instance with Hon. Sec., Dr. H. S. Harrison, 50, Great Russell Street, W.C.1.

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